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THE

ECLECTIC REPERTORY

AND

ANALYTICAL REVIEW,

Medical and Philosophical.

EDITED BY A SOCIETY OF PHYSICIANS.

.....Apis matinx

Møre modoque.—HOR.

Nullis unius disciplinæ legibus adstricti, quibus in philosophia necessariò paremus, quid sit in quaque re maxime probabile semper requiremus.—CIC.

VOL. IX.

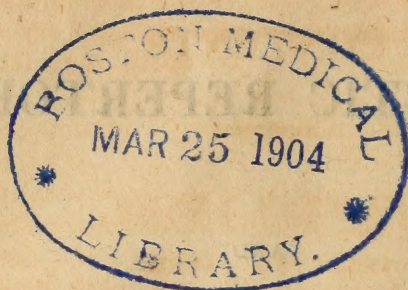
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EASTERN DISTRICT OF PENNSYLVANIA, TO WIT:

***** BE IT REMEMBERED, that on the twenty-third day of Novem-
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* * of America, A. D. 1819, Thomas Dobson and Son of the said district
***** have deposited in this office the title of a book, the right whereof they claim as
proprietors, in the words following, to wit:
"The Eclectic Repertory and Analytical Review, Medical and Philosophical. Edi-
ted by a Society of Physicians.

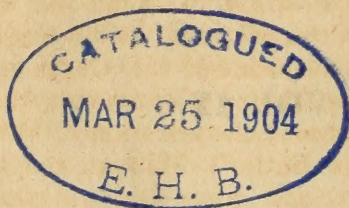
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More modoque.—Hor.

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quid sit in quaque re maxime probabile semper requiremus.—Cic.

VOLUME IX.

In conformity to the act of the Congress of the United States, intituled, "An
act for the encouragement of learning, by securing the copies of maps, charts and
books, to the authors and proprietors of such copies, during the times therein men-
tioned." And also to the act, entitled, "An act supplementary to an act, entitled,
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charts, and books, to the authors and proprietors of such copies during the times
therein mentioned," and extending the benefits thereof to the arts of designing,
engraving, and etching historical and other prints."

D. CALDWELL,
Clerk of the Eastern District of Pennsylvania.



CONTENTS.

NUMBER XXXIII.

SELECTED PAPERS.

Reflections on Securing in a Ligature the Arteria Innominata. To which is added, a Case in which this Artery was tied by a Surgical Operation. By Valentine Mott, M. D. Professor of Surgery in the University of New York, &c.	1
Surgical Account of the Naval Battle on Lake Erie, on the 10th of September, 1813. By Usher Parsons, M. D. Surgeon in the United States' Navy.	28
Experiments and Observations relative to Vision. By Marshall Hall, M. D. of Nottingham, formerly Senior President of the Royal Medical Society of Edinburgh,	33
Case of a Child aged six months, who swallowed a double-bladed knife without Injury,	41
History of the Excision of a Portion of the Ribs and Pleura. By M. Richerand, Principal Surgeon of the Hospital, St. Louis,	44
On the Dangers of Dissection. By M. Percy,	47

SELECTED REVIEWS.

An Essay on the Symptoms, Causes, and Treatment of Inversio Uteri; with a History of the Successful Extirpation of that Organ, during the Chronic Stage of the disease. By W. Newnham, Esq.	52
Topographie de tous les Vignobles connus, &c.; <i>i. e.</i> A Topographical View of all the known Vine-districts; explaining their Geographical Position, the Kind and Qualities of the Products of each, the principal Wine-trading Stations, the Names and Capacities of the Casks and Measures in use, the ordinary Modes of conveying them, &c. &c. accompanied by a general classification of Wines. By A. Julien, Author of the Butler's Manual, and Inventor of the Æriferous Tubes, and other Instruments for decanting and filtrating Liquors. 8vo. pp. 590. Paris, 1816.	63
Practical Illustrations of the Scarlet Fever, Measles, Pulmonary Consumption, and Chronic Diseases; with Remarks on Sulphureous Waters, &c. By John Armstrong, M. D. London, 1818, pp. 448.	74

ORIGINAL PAPERS.

Case of supposed Aneurism of the Right Carotid Artery. By Samuel Powel Griffiths, M. D.	119
---	-----

Two Experiments performed on Living Animals, to prove that the Circulation of the Blood, through the Lungs, is immediately and entirely suppressed during Expiration. By Richard Harlan, M. D. - - - - -	122
--	-----

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

Vaccination in India, - - - - -	129
New Vegetable Alkali, - - - - -	131
Analysis of the <i>Chenopodium Olidum</i> . By M M. Chevalier and Lasseigne, - - - - -	132
On the new metal Cadmium. By M Gay-Lussac, - - -	133
Letter from Sir Everard Home, Bart. to Mr. Brande, on the Use of Colchicum, - - - - -	133
Gas from Turf, - - - - -	136
Pathology of Phthisis; and the Influence of Climate over its developement. From the French of Broussais, -	136
Taliacotian Art, - - - - -	137
Brief Account of the Imperial Society of Naturalists at Moscow. By Dr. Lyall, Physician to the Countess Orloff-Tchesminsky, - - - - -	137
Philadelphia Dispensaries, - - - - -	140
Vaccine Society, - - - - -	140
Meteorological Observations, - - - - -	141
American Philosophical Society, - - - - -	142
List of recent Medical Publications, - - - - -	143

 NUMBER XXXIV.

SELECTED PAPERS.

Experiments on the Transfusion of Blood by the Syringe. By James Blundell, M. D. Lecturer on Physiology at Guy's Hospital, - - - - -	145
Some Observations on the cure of Hydrocele of the Tunica Vaginalis Testis, without procuring an obliteration of the Sac. By Kinder Wood, Esq. Member of the Royal College of Surgeons, and Surgeon in Oldham, - - -	166
Observations on the Sickness which prevailed at Jessore, (Bengal), in the months of Aug. and Sept. 1817. By Robert Tytler, M D. Assistant Surgeon, Civil Station, Zilla, Jessore, - - - - -	174
Some Remarks on the Climate and Situation of Nice, with Observations on the Temperature and Weather, taken in the Winter of 1816, and Spring of 1817. By a Correspondent, - - - - -	178
On Mental Alienation. (From the Dictionnaire des Sciences Medicales.) - - - - -	185

SELECTED REVIEWS.

Memoir on the Membrana Pupillaris, and on the formation

CONTENTS.

v

of the Arterial circle of the Iris. Read before the Royal Academy of Sciences, at their meeting, July 6th, 1818, by Julius Cloquet, M. D. late House Surgeon of the Civil Hospitals at Paris, Dissector to the Medical Faculty, Professor of Anatomy, Physiology and Surgery. 8vo. with a plate. Paris, Méquignon-Marvis, - - -	189
Observations on Phagedæna Gangrænosa. By H. Home Blackadder, Surgeon, - - - - -	199
Physiological and Medical Researches on the Causes, Symptoms, and Treatment of Gravel. By F. Majendie, M. D. - - -	219
Pathological and Therapeutical Observations on Hæmorrhoids, - - - - -	227
1. Observations on the Geology of the United States of America. By William Maclure. Philadelphia, 1817. 8vo. - - -	241
2. An Elementary treatise on Mineralogy and Geology. By Parker Cleaveland, Professor of Mathematics and Natural Philosophy, and Lecturer on Chemistry and Mineralogy, in Bowdoin College. Boston, 1816. 8vo. - - -	241

ORIGINAL PAPERS.

Humphreys' Inhaler, - - - - -	259
-------------------------------	-----

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

On the first use of Ergot to promote Parturition, - - -	260
Some Observations on the Varioloid Disease, which has lately prevailed in Edinburgh, and on the identity of Chicken pox and Modified Small pox, in a letter addressed to Dr. Duncan, Junior. By John Thomson, M. D. F. R. S. E. - - - - -	263
Additional Observations on Varioloid Diseases. By John Thomson, M. D. &c. &c. - - - - -	274
Observations on Tetanus, Medical and Surgical. Communicated to the Société Médicale d'Emulation, at Paris. By Dr. Louis Franck, Privy Counsellor and first Physician to her Highness the Dutchess of Parma, - - -	277
M. Esquirol's Observations at the Salpêtrière, - - -	279
University of Pennsylvania, Graduates in Medicine at the, - - -	281
Bills of Mortality, - - - - -	284

NUMBER XXXV.

SELECTED PAPERS.

On the Comparative Infrequency of Urinary Calculi among Seafaring People. By A Copland Hutchison, Esq Surgeon Extraordinary to his royal highness the Duke of Clarence, Surgeon to the Westminster General Dispensary, and late Surgeon to the Royal Naval Hospital at Deal, - - - - -	297
Some Observations on one species of Nævus Maternus; with	

the case of an Infant, where the Carotid Artery was tied. By James Wardrop, Esq F. R. S. Ed. - - -	314
On the Acetometer. By John and Philip Taylor, - - -	326
Further account of the result of an operation for forming an Artificial Pupil. Extracted from Letters addressed to Professor Scarpa. By J. P. Maunoir, Professor of Sur- gery at Geneva, - - - - -	333
An Account of the Progress of Knowledge respecting Ma- teria Medica, from June 1818, to January 1819, - - -	337
An Account of some Experiments made on the Body of a Criminal immediately after Execution, with Physiologi- cal and Practical Observations. By Andrew Ure, M. D. M. G. S. - - - - -	347
Account of the Elephantiasis in Iceland, from the Journal of a residence in that Island during the years 1814 and 1815, by Ebenezer Henderson, - - - - -	358
Cases illustrative of the beneficial Influence of the Nux Vo- mica in Paralysis. Related by Dr. Lescure, - - -	361
Diseases contracted by Milking Cattle and Sheep, - - -	364
On Sarsaparilla. By Richard Battley, Chemist, &c. - - -	365

SELECTED REVIEWS.

On the Mimoses; or, a Descriptive, Diagnostic, and Practical Essay on the Affections, usually denominated Dyspeptic, Hypochondriac, Bilious, Nervous, Chlorotic, Hysteric, Spasmodic, &c. By Marshall Hall, M. D. Author of "A Treatise on Diagnosis:" formerly Senior President of the Royal Medical Society, and Physician's Assistant in the Royal Infirmary, Edinburgh, - - - - -	367
Minutes of Cases of Cancer, Part II. being further Reports of Cancerous cases successfully treated by the new Mode of Pressure: with some Observations on the Nature of the Disease, as well as on the Method of Practice. By Samuel Young, Member of the Royal College of Sur- geons, &c. - - - - -	378
Practical Observations on the Nature and Treatment of Marasmus, and of those Disorders allied to it which may be strictly denominated Bilious. By Joseph Ayre, M. D. Member of the Royal Medical Society of Edinburgh; one of the Physicians to the General Infirmary at Hull; senior Physician to the Hull and Sculcoates Dispensary; and Physician in ordinary to the Lying-in Charity, at Hull, - - -	383
General reflections on Fistulæ, and on the Formation of an accidental Membrane in their course; followed by some Observations collected from the Clinical Lectures of Pro- fessor Dupuytren, on the different Species of Maladies of this kind, and on the particular Mode of Treatment adapted to them. By M. Breschet, Prosector to the Fa- culty of Medicine of Paris, and first Clinical Assistant at the Hotel Dieu, - - - - -	391

CONTENTS.

vii

ORIGINAL PAPERS.

Observations on the efficacy of the <i>Scutellaria Lateriflora</i> , or Scull-cap, as a preventive in Hydrophobia. By John Vancleve, M. D. of Princeton, New-Jersey, - -	402
Case of Intussusception. By Richard Harlan, M. D. -	405
Case of Varicose Swelling of the Labia Pudendi. By William Ingalls, M. D. - - - - -	409

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

American Pharmacopœia, - - - - -	411
Law for registering the birth of Children in the City of Philadelphia and its vicinity, - - - - -	412
Extract from a Law to secure the City and Port of Philadel- phia from the introduction of pestilential and contagious diseases, - - - - -	413
Hydrophobia. Extract from a publication by Doctors Sar- gent and Elijah Griffith, - - - - -	414
Case of Hydrophobia. By Doctor Neill and Doctors Klapp, Hospital for the Small-Pox, for Inoculation and for Vacci- nation, at Pancras, - - - - -	416
High Operation for the Stone, - - - - -	419
Bronchocele - - - - -	420
Geological Society of Connecticut, - - - - -	421
Morphia, - - - - -	422
Lunatic Hospital at Avignon, - - - - -	422
Prize question of the Philadelphia Medical Society, -	426
Account of Dr. Hugh Williamson, - - - - -	428
Meteorological Observations, - - - - -	429
College of Physicians at Philadelphia, list of Officers of the	430
List of recent European Publications, - - - - -	431
	432

NUMBER XXXVI.

SELECTED PAPERS.

Observations on Cancer. By T. Parkinson, M. D. - -	433
Enumeration of those Indigenous Plants which have an Emetic Effect. By Mr. Gray, - - - - -	446
Observations on Rabies Contagiosa. By Daniel Johnson, Esq. formerly a Medical Officer in the Honourable East India company's service, - - - - -	450
On the Treatment of Puriform discharge from the Ear. By J. H. Curtis, Esq. Surgeon-Aurist to the Prince Regent,	453
Abstract of the Anniversary Oration delivered before the Medical Society of London, on the 8th of March last. By T. J. Pettigrew, Surgeon, - - - - -	455

SELECTED REVIEWS.

The London Dispensatory. By Anthony Todd Thomson, F. L. S. Member of the Royal College of Surgeons, &c. Second Edition, London, 1818, 8vo. pp. 820. - -	467
---	-----

Observations on a Stridulous Affection of the Bowels; and on some Varieties of Spinal Disease: with an Appendix of Cases. By J. Bradley, M. D. Octavo, pp. 283. London, 1818	470
Tracts relative to the Causes, Cure, and Prevention of Contagious Fever,	482
Practical Observations on the Causes and Cure of Insanity. By William Saunders Hallaran, M. D. Physician to the Lunatic Asylum of Cork, &c. 1 vol. 8vo. pp. 213. Cork, 1818.	514

ORIGINAL PAPERS.

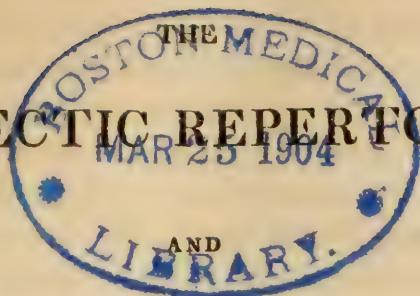
On the Cure of Chronic Rheumatism. By John C. Otto, M. D.	528
Cases of Blighted Fœtuses discharged from the Uterus at various ages, living children still remaining to the full period of Utero-Gestation. By James Mease, M. D.	531
Account of the Inflammatory Bilious or Yellow Fever at Angostura, and in the river Orinoco; with the particulars of the illness and death of Commodore Oliver H. Perry. By Mordecai Morgan, M. D.	534
Description of a new Machine-Bed, for the sick and persons with fractures of the lower extremities. By Benjamin H. Coates, M. D.	543
Observations on Diseased Ovaria. By Ephraim M'Dowell, M. D.	546
Case of Umbilical Hernia, with the appearances on dissection. By Benjamin Huger, M. D.	553

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

National Pharmacopœia,	555
Comparison of the Heat at Philadelphia, in 1818, and 1819,	557
Mortality in the City and Liberties of Philadelphia, in June and July 1818 and 1819,	557
Vaccination, in the City of Philadelphia,	558
Report from the National Vaccine Establishment of Great Britain,	558
Medical Lectures in the University of Pennsylvania,	561
Bill in Parliament relative to the sale of Poisonous Drugs,	561
Patients in the Pennsylvania Hospital,	562
An account of the Madhouse at Aversa,	562
Extracts from the Bills of Mortality in the City of Paris,	563
Medical Benevolent Society of London,	565
Jacob's lately discovered Membrane in the Eye,	567
Sir E. Home's paper on the Corpora Lutea,	567
on the ova of the Opossum tribe,	568

4830

ECLECTIC REPERTORY



ANALYTICAL REVIEW.

VOL. IX.

JANUARY, 1819.

No. I.

SELECTED PAPERS.

Reflections on Securing in a Ligature the Arteria Innominata. To which is added, a Case in which this Artery was tied by a Surgical Operation. By VALENTINE MOTT, M. D. Professor of Surgery in the University of New York, &c. Pamphlet, 1818.

SINCE the publication of Allan Burns's invaluable work on the Surgical Anatomy of the Head and Neck, I have been in the habit of showing in my surgical lectures the practicability of securing in a ligature the Arteria Innominata; and I have had no hesitation in remarking that it was my opinion, that this artery might be taken up for some condition of aneurisms; and that a surgeon, with a steady hand and a correct knowledge of the parts, would be justified in doing it. I felt myself warranted in this, from the singular success which this celebrated anatomist informs us attended his injections, and from my own investigations of this subject. If the right arm, right side of the head and neck, can be filled with injection, after interrupting its passage through the innominata, as we believe they can, who can doubt the possibility of the blood to find its way there also, as it will pass through thousands of channels, which

VOL. IX.

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No. 33.

art could not penetrate even by the finest injections? The well known anastomoses of arteries, and the great resources of the system in cases of aneurism, encouraged me to believe, that this operation might be performed with reasonable prospects of success. With all this sanction, and the analogy of the other great operations for aneurism, I could not for a moment hesitate in recommending and performing the operation.

The following operation, as the steps of it will show, was performed with the two-fold intention: 1st, of tying the subclavian artery before it passes through the *scaleni* muscles, if it should be found in a fit state; and 2dly, to tie the *arteria innominata* in case the former should be diseased or too much encroached upon by the aneurismal tumour.

Michael Bateman, aged 57 years, was born in Salem, Massachusetts, and by occupation a seaman. He was admitted into the New York hospital on the 1st of March, 1818, for a catarrhal affection, having at the same time his right arm and shoulder much swollen. At the time of his admission, the catarrh being thought the most considerable disease of the two, he was received as a medical patient, and placed under the care of the physician then in attendance. During the three first weeks of his residence in the house, the catarrh had greatly yielded to the remedies prescribed. The inflammation, which had produced an enlargement of the whole superior extremity, extending itself to the muscles of the neck on the right side, was also gradually subsiding.

A tumefaction, however, situated above and posterior to the clavicle, at first involved in the general swelling, and not to be distinguished from it, began to show itself. This resisted the remedies which were effectual in relieving the other, and became more distinct and circumscribed as the latter subsided; at length assuming the form of an irregular tumour.

The history which he gave of the case is as follows. He said, about a week before he entered the hospital, while at work on ship-board, his feet accidentally slipped from under him, and he fell upon his right arm, shoulder, and the back part of his head; that he felt but little inconvenience from the fall, and after a short time returned to his duty. Two days

subsequent to this, however, he felt pain in the shoulder, and the succeeding night was unable to lie upon it in bed. The whole arm and shoulder then began to swell, and became so painful that he was unable any longer to perform his duty as a seaman. The ship having arrived in New York, he was admitted into the hospital.

For some time after the general swelling had subsided, leaving the tumour distinct and circumscribed, no circumstance occurred which gave rise to a suspicion of its being aneurismal. The enlargement was thought to be a common indolent tumour, and was repeatedly blistered, with a view to discuss it. The tumour gradually diminished under this treatment; though a considerable time elapsed before any very striking change took place.

At length a faint and obscure pulsation was perceived; still it was a matter of doubt whether the tumour was aneurismal, or whether the pulsatory motion was communicated to it by the subclavian artery, immediately over which it was situated. From its firm unyielding nature upon pressure, the latter was considered as the most probable, and the blisters were continued as before. During the whole of this time the patient had worn his arm in a sling, the motions of it being very limited, and always attended with pain.

The patient remained in this state for several days, without any marked change either in his feelings or in the appearance of the tumour.

On the 3d of May, at six o'clock in the afternoon, the patient complained that he "felt something give way in the tumour," that his shoulder was very painful, and that he was able to raise it only a few inches from his side. The tumour at this time suddenly increased about one third, and a pulsation was distinctly perceptible. Its most prominent part was below the clavicle; at which place the pulsation was most distinct. The portion above the clavicle was also much enlarged; it still however had its usual firmness, except in one point near its centre.

May 4th.—The tumour is evidently increased, that portion of it more particularly which is below the clavicle; it is

not as firm and resisting as it has been. Pulsation is not so distinct as yesterday, but appears to be more diffused.

He was this day transferred to the surgical side of the house, and became my patient. The cough having become comparatively slight, the tumour appeared to be the most urgent disease; and, in my opinion, to call for prompt attention. The arm is now perfectly useless, and any motion at the shoulder joint gives him severe pain. The patient is naturally of a spare habit, and from the nature of his disease, and the confinement to which he has been subjected, has become much reduced in strength.

May 5th and 6th.—The tumour is still progressing, and the pain in the shoulder is also more severe. During the three last days his medicines have been discontinued, except that he is allowed to rub the parts about the clavicle with volatile liniment.

On the 7th I directed a consultation of my colleagues to be called, consisting of Drs. Post, Kissam and Stevens. I now stated to them that I wished to perform an operation, which would enable me to pass a ligature around the subclavian artery, before it passes through the scaleni muscles; or the arteria innominata, if the size of the tumour should prevent the accomplishment of the former. This I was permitted to do, provided the patient should assent, after a candid and fair representation was made to him of the probable termination of his disease; and that the operation, though uncertain, gave him some chance, and, as we thought, the only one of his life.

Dr. Post, at my request, communicated with him privately on this subject; and after a full explanation of the nature of the case, my patient requested to have any operation performed which promised him a chance for his life, saying that in his present state he was truly wretched.

May 8th, 9th, and 10th.—The tumour is acknowledged by all to be increasing, and it is thought proper not to defer the operation any longer. I therefore requested that preparation be made for performing it to-morrow.

It is difficult to give an idea of the size of a tumour so irre-

gular in its form, and so peculiarly situated. A thread passed over it, from the lower part of that portion of it which is below the clavicle toward the back of the neck, will measure five and a quarter inches.—Another crossing this at right angles one inch above the clavicle, will measure four inches; two and a half inches of the thread are on the sternal side of the former, and one and a half on the acromial. It rises fully an inch above the clavicle, which, added to the depression below the clavicle on the opposite shoulder, will make the size of the swelling above the natural surface about two inches.

May 11th.—One hour before the time assigned for the operation, the patient appeared perfectly composed, and apparently pleased with the idea that the operation afforded him a prospect of some relief. He was directed to take of tinct. opii, 70 drops.

No difference can be perceived in the pulsation of the arteries in the two extremities; his pulses are uniform and regular, each beating 69 in a minute.

He was placed upon a table of the ordinary height, in a recumbent posture, a little inclining to the left side, so that the light fell obliquely upon the upper part of the thorax and neck. Seating myself on a bench of a convenient height, I commenced my incision upon the tumour, just above the clavicle, and carried it close to this bone and the upper end of the sternum, and terminated it immediately over the trachea; making it in extent about three inches. Another incision about the same length, extended from the termination of the first along the inner edge of the sterno cleido mastoid muscle. The integuments were then dissected from the platisma myoides, beginning at the lower angle of the incisions, and turned over upon the tumour and side of the neck.

Cutting through the platisma myoides, I cautiously divided the sternal part of the mastoid muscle, in the direction of the first incision, and as much of the clavicular portion as the size of the swelling would permit, and reflected it over upon the tumour. The internal jugular vein was encroached upon by the swelling, which made this part of the operation of the utmost delicacy, from the morbid adhesion of that part of the

clavicular portion of the muscle to it, which was detached. I separated this portion of the muscle to as great an extent, however, as the case would possibly allow, to make room for the subsequent steps of the operation; only a part of the vein was exposed. The sterno hyoid muscle was next divided, and then the sterno thyroid, and turned upon the opposite side of the wound, over the trachea. This exposed the sheath containing the carotid artery, par vagum, and internal jugular vein. A little above the sternum, I exposed the carotid artery, and separated the par vagum from it; then drawing the nerve and vein to the outside, and the artery towards the trachea, I readily laid bare the subclavian about half an inch from its origin. In doing this, the handle of a scalpel was principally used, nothing more being required but to separate the cellular membrane, as it covers the artery. I judged it would be very imprudent to introduce a common scalpel into so narrow and deep a wound, especially as it would be placed between two such important vessels or parts, as the carotid and par vagum, and where the least motion of the patient might cause a wound of one or the other of them. The proper instrument, in my opinion, for this part of the operation, is a knife, the size of a small scalpel, with a rounded point, and cutting only at the extremity; this was used, and found to be very convenient for this stage of the operation. It can be introduced into a deep and narrow wound, among important parts, without the hazard of dividing any but such as are intended to be cut. This knife is contained in a set of instruments admirably calculated for this and other operations on arteries deeply seated, and which I shall mention more particularly hereafter.

On arriving at the subclavian artery, it appeared to be considerably larger than common, and of an unhealthy colour; and when I exposed it to the extent of about half an inch from its origin, which was all that the tumour would permit, to ascertain this circumstance more satisfactorily, my friends concurred with me in opinion that it would be highly injudicious to pass a ligature around it. The close continuity of the tumour would of itself have been a sufficient objection to the application of the ligature in this situation, independent of the

apparently altered state of the artery. Art in this case could not anticipate any thing like the institution of the healthy process of adhesive inflammation, in an artery in the immediate vicinity of so much disease. The Pathology of arteries has long since taught us, that ulcerative inflammation, and all its train of consequences, would have been the inevitable result. This was the fate of the only case, in which a ligature has been applied to the artery in this situation. The operation was performed by that eminent Surgeon of Dublin, Dr. Colles.

While separating the cellular substance from the lower surface of the artery, with the smooth handle of an ivory scalpel, a branch of artery was lacerated, which yielded for a few minutes a very smart hæmorrhage, so as to fill the wound perhaps six or eight times. It was about half an inch distant from the *innominata*, and from the stream emitted, was about the size of a crow quill. It stopped with a little pressure. I can scarcely believe this to have been the internal mammary, from the hæmorrhage ceasing so quickly; though, from its situation, it would appear so; and if from some irregularity it were not the superior intercostal, it must have proceeded from an anomalous branch.

With this appearance of disease in the subclavian artery, it only remained for me either to pass the ligature around the *arteria innominata*, or abandon my patient. Although I very well knew, that this artery had never been taken up for any condition of aneurisms, or ever performed as a surgical operation, yet with the approbation of my friends, and reposing great confidence in the resources of the system, when aided by the noblest efforts of scientific surgery, I resolved upon the operation.

The bifurcation of the *innominata* being now in view, it only remained to prosecute the dissection a little lower behind the sternum. This was done mostly with the round edged knife, taking care to keep directly over and along the upper surface of the artery. After fairly denuding the artery upon its upper surface, I very cautiously, with the handle of a scalpel, separated the cellular substance from the sides of it, so as to avoid wounding the pleura. A round silken ligature

was now readily passed around it, and the artery was tied about half an inch below the bifurcation. The recurrent and phrenic nerves were not disturbed in this part of the operation.

As most surgeons who have performed operations upon large arteries, in deep and narrow wounds, complain of the embarrassment which has attended the application of the ligature, I am happy in the present opportunity to have it in my power to recommend an instrument, or contrivance, which, in my opinion, is calculated to surmount all difficulties. This set of instruments consists of several needles of different sizes and curvatures, with sharp and blunt points, and having in each two eyes. The needles screw into a strong handle or shank of steel: two strong instruments in handles, with a ring or eye in the extremity similar to a tonsil iron, and perhaps they may be called ligature irons: a small knife rounded at the extremity like a lancet for scarifying the eyes, and a small hook at the extremity of a steel shank, also fixed in a strong handle. These instruments are the invention of Drs. Parrish, Hartshorne, and Hewson, of Philadelphia. They are the result of investigations made upon the dead body, as to the best mode and place for tying the subclavian artery on the *acromial side of the scaleni muscles*.*

With the ligature introduced into the eye of one of the smallest blunt needles, which was nearest the shank of the instrument, I pressed down the cellular substance and pleura with the convex part, and very carefully insinuated it from below upwards, under the artery. The point of the needle appearing on the opposite side of the artery, I introduced the hook into the other eye of it; then unscrewing the shank, the needle was drawn through with the utmost facility, leaving the ligature underneath the artery.

In the application of the ligature to this artery, I would invite the attention of those who perform it, to a circumstance which, in my opinion, is somewhat important: it is, to pass the ligature from below upwards, in order to prevent the pleura

* See Dr. Parrish's Paper, Eclectic Rep. Vol. III. p. 229.

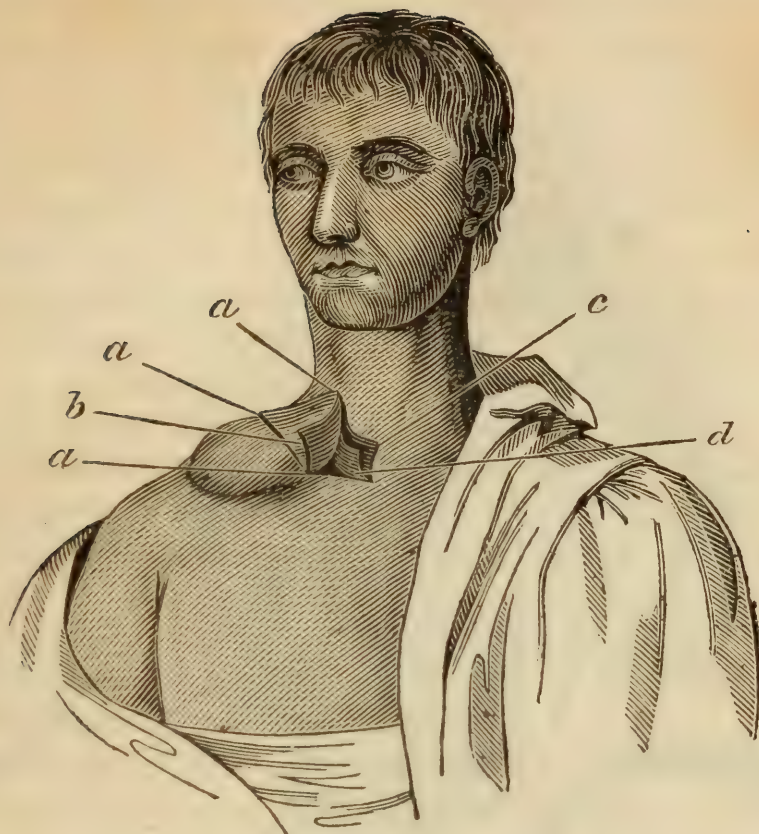


PLATE I.

Represents the tumour very correctly, with its elevation above and below the clavicle, and the extent of it towards the acromion scapulæ, and likewise as it encroached upon the trachea. The form of the external incision with the subsequent steps of the operation, as far as can be given in a drawing, are also shown.

a, a, a. The angles of the integuments as turned over upon the tumour.

b. The sternal and a part of the clavicular portion of the sterno cleido mastoid muscle, raised, and reflected over upon the integuments.

c. The sterno hyoid muscle laid over upon the trachea.

d. The sterno thyroid muscle also raised and reflected inwards over the trachea.

PLATE II.

Exhibits the morbid appearances which were found upon dissection.

a, a, a. View of the ulcer as it extended under the clavicle, and towards the trachea.

b. The upper part of the arteria innominata, about which the ligature had been applied, appearing rough and irregular from the erosion of the ulcer.

c. A coagulum of blood adhering pretty firmly to one side of the innominata.

d. Contracted and puckered appearance of the upper part of the innominata, and particularly of its internal coat.

e. Arteria innominata cut open from the aorta.

f. Anomalous branch of the innominata.

g, g. The aorta.

h. Left carotid.

i. Left subclavian.

k. The heart collapsed.

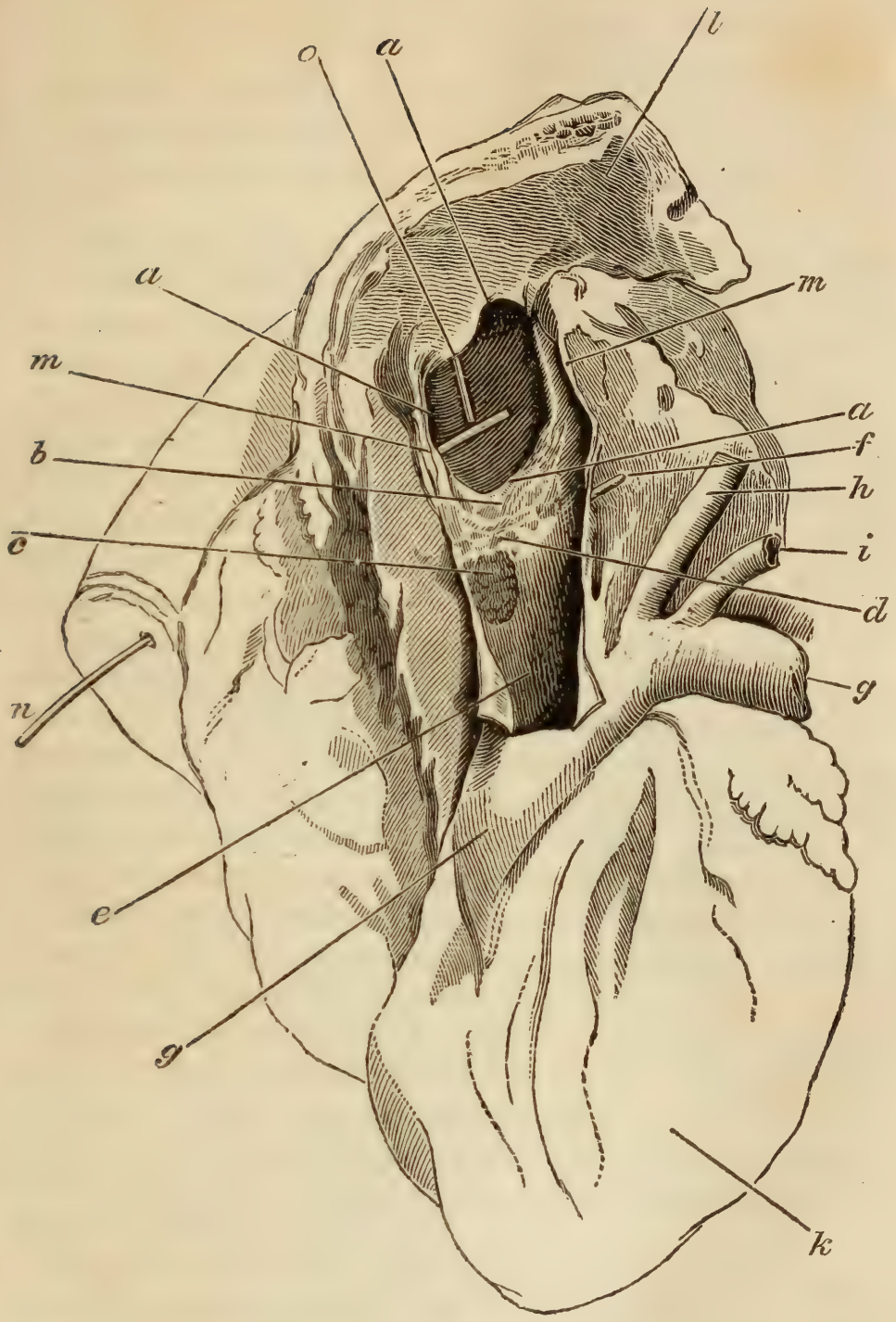
l. Sternum and clavicle turned up.

m, m. Pleura much thickened.

n. Probe introduced into the axillary artery, passed through the subclavian, and appearing in the cavity of the ulcer.

o. A small bougie passed along the common carotid, and its extremity also seen in the ulcer.

PLATE II.



from being wounded. From the use of these instruments repeatedly, I would also recommend, that the hook be fixed in the eye of the needle before the shank is unscrewed, otherwise very considerable difficulty will be experienced in finding it; and even when felt, not easily introduced, from the want of firmness which the handle part of the instrument would afford.

I now made a knot in the ligature, and with my forefingers carried it down to the artery, and drew it a little so as partly to close its diameter and arrest the column of blood gradually. This was continued for a few seconds, to observe the effect produced upon the heart and lungs; when, no change taking place, it was drawn so as to stop the circulation entirely, as was shown by the radial artery of the right arm, and the right temporal immediately ceasing to pulsate. The knot was drawn more firmly by the ligature irons, and a second knot applied in the same manner.

In no instance did I ever view the countenance of man with more fluctuations of hope and fear, than in drawing the ligature upon this artery. To intercept suddenly one fourth of the quantity of blood, so near to the heart, without producing some unpleasant effect, no surgeon, *à priori*, would have believed possible. I therefore drew the ligature gradually, and with my eyes fixed upon his face, I was determined to remove it instantly, if any alarming symptoms had appeared. But, instead of this, when he showed no change of feature or agitation of body, my gratification was of the highest kind.

Dr. Post now asked him if he felt any unpleasant sensation about his head, breast, or arm, or felt any way different from common; to which he replied, that he did not.

Immediately after the ligature was drawn tight, the tumour was reduced in size about one third, and the course of the clavicle could be distinctly felt.

The parts were now brought into coaptation, and the integuments drawn together by three interrupted sutures and straps of adhesive plaster; a little lint and additional straps completed the dressing. Three small arteries were tied in the course of the operation: the first was under the sternum, and

divided with the sternal part of the mastoid muscle, and from its course may have been a branch of the internal mammary reflected upwards; the second, in raising the inner edge of the mastoid muscle, about the upper angle of the longitudinal incision, and must have been the most descending branch of the superior thyroid; and the third, was a branch of the inferior thyroid, and cut while raising the sterno thyroid muscle. The patient lost perhaps from two to four ounces of blood, most of which came from the ruptured branch of the subclavian. The operation occupied about one hour.

The curved spatulas recommended by Dr. Colles, I found of great use in the operation. I provided three for this purpose, two broad, and one narrow, bent at right angles, and sufficiently firm. After raising the muscles, they were of the greatest advantage in keeping separated the carotid artery and par vagum, as likewise the divided muscles; they served also another very useful purpose, that of preventing by their equable pressure the constant oozing from the smaller vessels; and the little room taken up in a small and deep wound, will give them a great superiority over the fingers introduced.

Ten minutes after the operation the pulse is regular, and not the least variation can be perceived; it beats 69 strokes in a minute; the patient says he is perfectly comfortable, and has no new or unnatural sensation, except a little stiffness of the muscles of the neck, which he thinks is owing to the position in which his head was placed during the operation; the temperature of the right arm is a little cooler than the left; his breathing has not been the least affected by the operation, but is perfectly free and natural.

2 o'clock, P. M.—Patient expresses a desire to eat, and is directed a little thin soup and bread; the temperature of both arms is very nearly the same; breathing perfectly natural; pulse as before.

3 o'clock, P. M.—There is still a trifling difference in the temperature of the two arms; ordered the right to be wrapped in cotton wadding; not the least unpleasant symptom has as yet made its appearance.

6 o'clock, P. M.—Complains of a little pain in his head, not

more on one side however than the other; describes it as a common head-ache: the pain of the shoulder and arm much less than before the operation: no difference can now be perceived in the temperature of the two arms; pulse a little accelerated, and perhaps a little full.

9, P. M.—Patient complains of head-ache; skin is rather hotter than natural; pulse strong and full, and beats 75 in a minute; the carotid on the left side of the neck is observed to be much dilated and in strong action; tongue moist and clean.

9½, P. M.—Symptoms continuing the same, directed him to be bled from the left arm to $\frac{3}{4}$ xvj. After bleeding the pulse fell 7 beats, and was less full. Complains of some thirst; let him drink common tea.

12, P. M.—Patient has slept a little; is free from pain; pulse full and less frequent, beats 60; skin moist and of a natural temperature.

Second day, 2 o'clock A. M.—Patient enjoys a natural and undisturbed sleep: respiration free, and performed without the least difficulty.

5, A. M.—He has rested well the last three hours. Says he has a slight head-ache, and a little pain in the right elbow: the latter he attributes to the position in which his arm has lain during sleep; pulse full, but not so tense as before the venesection; skin natural and moist; temperature of both arms the same. He states that he can now incline more upon the right shoulder than he has been able to do since the second day after he received the injury.

9, A. M.—Pain in the head no way troublesome; skin moist and of natural temperature; tongue clean; says his neck feels stiff, but is not painful; has no difficulty in swallowing. His cough has thus far been much less frequent than before the operation: expectoration is also attended with less difficulty; pulse 75, full, but not tense; has taken a dish of coffee, and some bread; complains of some thirst; directed a solution of supertartrite of potass to be drank occasionally.

10, A. M.—Symptoms as before; the veins of the fore-arm and hand since the operation have been as much distended as previous to it, and upon compressing them so as to stop the

circulation, and allow the vein to become empty for some distance above, the column of blood is seen to distend the vein immediately upon the removal of the pressure; plainly showing, that the circulation is going on with considerable rapidity, although no pulsation has been felt in the brachial or radial arteries. The radial artery can be easily distinguished by the fingers, and seems to be filled with blood. There is evidently a pulsation in the anterior branch of the temporal artery, just as it is passing a little above the exterior canthus of the orbit; the left external carotid is beating with increased action, and appears larger than natural.

3, P. M.—Has taken a light dinner, and complains of a little head-ache; pulse has become tense, and is also increased in frequency; skin is considerably hotter than natural; tongue too indicates a febrile action: was bled to $\frac{3}{4}$ viij. and directed to drink freely of a solution of the supertartrate of potass.

10, P. M.—Since the last report he has become more comfortable; complains of no pain, and says he lies perfectly easy; pulse increased in frequency to 78, but of the natural soft feel; the right side of the face has been at times a little cooler than the left, and is so at the present time: it is, however, not so much so as to be perceptible to the patient; temperature of the right arm natural: that of the left, and the whole body, is above the natural standard, but it is moist; tongue is clean: having had no evacuation from his bowels since the operation, is directed to take a saline cathartic, in divided doses.

1, A. M.—Complains of nothing; has not slept any; cathartic has operated twice.

Third day, 5 A. M.—Has had no sleep, in consequence of the operation of the medicine, it having produced free evacuations in the course of the night; skin not so moist, but of natural temperature; the two arms have equal warmth; pulse full, and rather more frequent than last evening: says his right elbow is a little painful, and the arm feels tired. The complete flexion of the arm at the elbow is prevented by a little rigidity of the extensor muscles.

9, A. M.—He is now comfortable, has slept a little, and feels refreshed; pulse is full, and rather more frequent than

natural; skin natural and moist: the size of the tumour is considerably diminished; has taken a dish of chocolate and some rusk.

11 $\frac{1}{2}$, A. M.—Patient still free from pain, or any uneasiness; medicine has operated seven times; skin not hotter than natural, and moist; tongue clean; the right facial and anterior temporal arteries communicate a distinct pulsation to the fingers. Having slept but little during the last night, directed him to take an anodyne of Tinct. Opii. gtt. xxx. and to have the room made dark, and kept quiet, in order to procure him some sleep: let him have sago or panada as often as he inclines to take nourishment.

4, P. M.—Has slept the last two hours, and is still sleeping; respiration free and easy; nothing the least unnatural in his appearance.

10, P. M.—He has slept four hours, and is much refreshed; is free from pain, except a little in the elbow; pulse small and soft, beating 105 strokes in a minute; tongue clean; feels a little soreness in the wound when swallowing; has taken a considerable quantity of sago and panada; his appetite is good; temperature natural and uniform in both arms.

12, P. M.—Patient has slept the greater part of the time; is free from pain, and perfectly comfortable; skin moist and natural; pulse soft, small, and frequent.

Fourth day, 6 o'clock, A. M.—Patient has passed a good night; says his right elbow gives him some uneasiness, but complains of nothing else; tongue is clean; skin moist and natural; can move the right arm with considerable ease; says he takes as much light nourishment as he has been accustomed to for some time past: no unfavourable symptom has as yet made its appearance.

11, A. M.—Symptoms continue much the same; tongue slightly furred; pulse comparatively small and soft, beats 105, and regular; respiration has been uniformly natural since the operation; suppuration has begun to appear through the dressings, and is attended with a little fætor; let them be covered with a yeast poultice: it is thought that a faint pulsation or un-

dulation is at intervals felt in the radial artery of the right arm: the left external carotid continues its increased action.

6, P. M.—No change is observable in the patient's symptoms; he still continues comfortable, and complains of nothing.

Fifth day, 11 $\frac{1}{2}$ o'clock, A. M.—The wound was dressed to-day: on removing the poultice the dressings were soft and easily came away; the suppuration was considerable, and of a healthy appearance; it was found that the extremities of the two incisions were united as far as the sutures, each about one inch in extent; one suture at the angle of the wound was removed; the wound was dressed with dry lint, gently pressed into it; adhesive straps and a compress: his pulse beats 110, is fuller and stronger than yesterday.

6, P. M.—Patient is very comfortable, subject to no pain or unnatural sensation; pulse still 110, but softer.

Sixth day, 6, A. M.—Patient sleeps; respiration not attended with the least difficulty; skin moist and natural.

9, A. M.—He has rested well during the night, and is perfectly free from pain; pulse 110, and soft; skin moist; tongue clean: having had no alvine evacuation since the 13th, directed to take of sulphate of soda \bar{z} j, in divided doses.

11, A. M.—The dressings were again removed, and the discharge seemed more considerable than at the former dressing; the sides of the wound are granulating, and appear perfectly healthy; on the ends of the muscles that were divided in the operation, there are small sloughs which are beginning to separate, leaving a healthy surface underneath; wound was dressed with lint spread with Ung. Res. Flav. and adhesive straps: pulsation is now perfectly distinct in the branches of the right external carotid artery: complains a little of the back part of his head, which he says is sore from lying; in other respects is comfortable.

6, P. M.—Has no pain, and is in every respect much as usual; tongue clean; skin natural; says he feels "no weaker than before the operation."

Seventh day, 6, A. M.—He has passed a comfortable night, and is free from pain or any uneasiness; pulse regular and

soft, and beats 105 in a minute; skin moist, and of natural temperature.

11, A. M.—The wound was again dressed: suppuration considerable and healthy; some of the small sloughs came away, leaving a healthy and florid surface beneath: sprinkled the wound with powdered carbon, then filled it lightly with lint, and over this applied the yeast poultice, which was secured with adhesive straps: temperature of the two arms is the same, cathartic having produced no effect, *Habeat enema purgans statim*.

9, P. M.—Symptoms have not varied materially: the enema has produced a copious evacuation: says he feels more comfortable, and desires to set up in bed, which was allowed, taking care to have him raised up very cautiously, in order to prevent any exertion being made with the right arm and shoulder.

Eighth day, 6, A. M.—Patient has rested well during the night; says he feels some pain on swallowing, and that when the attempt is made, it gives rise to a fit of coughing, which fatigues him; it also occasions some soreness in the wound: pulse still soft, and less frequent than yesterday: he takes a reasonable quantity of light food every day:—Directed a cetaceous mixture for his cough, and is permitted to set up for a short time, if he feels disposed.

11, A. M.—Pulsation of the radial artery of the right arm to be felt occasionally pretty distinct; cough has become more troublesome; pulse 100; skin natural and moist. The dressings were again removed, and the suppuration is more profuse, apparently healthy, though attended with considerable fœtor; appearance of the wound every way favourable; small portions of the sloughs are removed at each dressing, and the sides of the wound look perfectly healthy; the same dressings to be continued.

9, P. M.—Complains only of his cough, which troubles him frequently; can move his arm with much more facility, and has no pain in it; circulation as before, and the temperature uniform and natural. The wound was dressed this evening, in consequence of the fœtor being unpleasant to the patient; continue the dressings.

Ninth day, 7 A. M.—Patient was found sitting up in bed, supported by a bed-chair, having passed a good night; is in good spirits, and expresses his gratitude for the relief afforded by the operation; says he can move the arm with greater ease, and it gives him no pain; pulse 105, regular and soft; skin natural; every symptom as favourable as could be wished.

10, A. M.—Pulse less frequent, regular and soft; temperature perfectly natural; wound has a more favourable appearance, discharges less in quantity, and it possesses less fœtor: dressed the wound as yesterday; tumour has diminished two thirds, is soft, and less florid. The apex of the tumour is now below the clavicle.

6, P. M.—Patient still in every respect as comfortable as at the last report.

9, P. M.—Pulse 110, regular and soft: the dressings were removed this evening; the wound is much contracted in size, and is perfectly healthy, except a small slough which still remains in the deepest part of the wound; granulations are shooting up rapidly from the sides.—When preparing to renew the dressings, an unexpected and an unaccountable hemorrhage took place, which suddenly filled the cavity of the wound. The rapidity with which the blood flowed, and the size of the stream, gave rise to fearful apprehensions for the man's safety: dry lint was immediately placed in the wound, and as much pressure made as the patient could conveniently bear, which quickly stopped it. After continuing the pressure for a short time, the lint was removed, when no hemorrhage recurring, the usual dressings were repeated: the patient experienced no ill effects from the bleeding, nor did he seem to be much agitated. At 10, o'clock P. M. has no pain, nor has he as yet had any sleep.

Tenth day, 7, A. M.—Has passed a comfortable night, except that he has been frequently disturbed by his cough: tongue clean; skin moist; pulse soft, and has much less strength than before.

11, A. M.—The dressings were again removed, and the wound made clean; its appearance is in every respect favourable; does not appear to have been the least injured by the

hemorrhage: the dressings were renewed as before: he is directed to take half an ounce of the cold infusion of cinchona every hour, and to drink occasionally of ale when thirsty: has had an evacuation from his bowels to-day.

6, P. M.—Symptoms much as before; complains a little of his elbow, and a numbness in his hand; to relieve which he is directed to have the arm and hand rubbed well, and wrapped in wadding.

Eleventh day, 6 A. M.—Patient has rested well during the night; cough has not been so troublesome, says he has no pain, and feels perfectly comfortable; pulse better than yesterday; other symptoms as before.

11, A. M.—The wound is dressed daily at this hour; its appearance is still very favourable, although there is still some fœtor in the suppuration: the wound has contracted perhaps one third: the tumour is also considerably diminished, and softer than before; pulsation in the right temporal and radial arteries as before: the same dressings to be continued.

6, P. M.—No change in the patient's general symptoms; pulse soft, and rather more frequent; appetite is as good as usual.

9, P. M.—Appearances have not varied.

Twelfth day, 6 A. M.—Our patient was visited as usual this morning, but there is no evident change in any of his symptoms; says he now rests well at night.

11, A. M.—To-day, when the dressings were removed, that portion of the slough which occupied the bottom of the wound (apparently a portion of the sheath of the vessels) came away: every part of the wound now, where its surface can be seen, has a healthy look: the most depending part is obscured by a quantity of pus, which cannot be wholly removed by lint, and it is not thought safe to permit the patient to lie in such a position as will allow it to be discharged: with the slough came away the ligature which had been applied to an artery under the lower portion of the sterno-thyroid muscle; it was followed by no hemorrhage: the wound was now dressed with pledgets of lint, spread with Ung. Resinæ

Flavæ and adhesive straps. He remains much as yesterday, has drank freely of ale; pulse rather stronger than yesterday.

Thirteenth day, 7 A. M.—No perceptible change in his symptoms; complains of no pain, and says he feels very comfortable; cough has given him very little trouble for the last two days; he is evidently considerably weaker than before the operation, but is not sensible of it himself.

11, A. M.—The wound was again exposed; it is not as florid as yesterday, and there is a greater secretion of pus; the cavity of the wound was filled with dry lint only; the pus appears well formed, and has very little fætor.

The same dressings were repeated in the evening; there is still a quantity of pus at the bottom of the wound, which rises and falls at each inspiration and expiration: it continues to contract above, leaving us uncertain of its extent beneath: during the last three days, the patient has set up for several hours each day.

9, P. M.—Pulse and skin perfectly natural; has had a natural evacuation from his bowels to-day; continues the infusion of bark as prescribed before.

Wound was again dressed, and is as healthy as usual; supuration just sufficient to moisten the lint: the same dressings to be continued.

Fourteenth day, 7 A. M.—Patient has slept well during the night, and is as well as usual; complains of soreness of the ulcer which he has had for some time between his shoulders; it is improving in its appearance, and is directed to be dressed as usual with Ung. Resinæ Flavæ. The erysipelatous blush which surrounded it, is not as florid as heretofore; it is beginning to granulate, and assume a healthy appearance: in other respects he is perfectly comfortable: he is now able to raise the right arm to his lips, which he has not done since the fourth day after the accident by which his shoulder was injured; says too that he is getting stronger, and that he walked across the floor this morning without any assistance.

11, A. M.—On removing the dressing, the granulations appear perfectly florid and healthy: the bottom of the wound is not visible, owing to the small quantity of matter which col-

lects there, and from its depth cannot be easily removed, and perhaps not altogether safely; the position of the patient in bed must necessarily make the bottom of the wound the lowest: when he coughs or swallows, a small quantity of fluid pus at the bottom of the wound is seen to rise and fall; from the general appearance however of the wound, the man's feelings, and many other circumstances, it is not probable that there is any considerable quantity: the large ligature lying very loose in the wound, was taken hold of, merely however to see if it was separated; no force was used: pulsation of the right radial artery more distinct than heretofore: countenance of our patient is improving; says he feels more comfortable than before the operation: he can now straighten his arm, and raise it to his mouth with facility: as yet he has not recovered his strength, but is improving daily; has been setting up all day: directed him when lying down, to assume a more recumbent posture. Continue the sulphuric acid and infusion of cinchona, as before: complains of the ale being too strong; let it be diluted and made pleasant with sugar and nutmeg.

9, P. M.—The large ligature, since the operation, has been confined upon the upper part of the sternum by a piece of adhesive plaster, to prevent any accident during the dressings. Upon dressing the wound this evening, the large ligature as it lay in the wound, appearing to be loose, was again taken hold of with the forceps, and found floating upon the pus, being completely separated from the artery below. The ligature was drawn so firmly upon the artery, that the noose was only large enough to admit the rounded end of a common probe. The wound looks healthy, and is contracting rapidly; it is now perhaps not more than one third of its original size. Suppuration is now only sufficient to moisten the lint through.

Fifteenth day, 12 o'clock.—The patient is comfortable in every respect; pulse and skin perfectly natural; is sitting up in bed, and occasionally amusing himself with a book; not the least symptom about him indicating indisposition: wound is healthy, and continues to improve in appearance. The right arm at intervals gives him a sensation of numbness,—not more, however, than can be accounted for from the uniform

position in which the arm rests, and no doubt a more languid circulation, as it is readily removed by a little friction and motion of the arm. His appetite improves, and he expresses a desire to walk about the room. The bark and sulphuric acid to be continued.

9, P. M.—In the afternoon he was removed down stairs, from the private room in which he was placed immediately after the operation, to the ward in which he formerly lay, and appeared highly gratified with the idea of again seeing his friends, whom he had left with very little hope of ever returning to. The wound, upon being dressed, did not appear to have undergone any perceptible change.

Sixteenth day, 11 A. M.—Our patient's strength is improving. To-day he made an effort, and with success, to visit his friends in Ward No. 7, where he lay previous to his being transferred to the surgical department, and returned, without having any support; pulse as strong as before the operation, and in every respect natural; appetite better than before the operation; cough a little troublesome, but less so than for several days previous; wound dressed with dry lint.

9, P. M.—Dressings removed; patient as before; suppuration small in quantity, and appears to be well-formed pus, and is not attended with the least fœtor.

Seventeenth day, 11 o'clock.—The ends of the divided muscles are nearly in contact, and the surfaces of the wound are rapidly granulating, and in every respect look well: patient's health continues to improve; he walks about the room with perfect ease, and into several wards in the same story; the ability to move the arm increases; pulse and skin natural. The dressings were removed at 4 P. M., and also at 10 P. M.

Eighteenth day.—The patient's strength continues to improve; every symptom remains highly flattering; cough less troublesome. The dressings were again removed to-day three times.

Nineteenth day.—Continues the same as yesterday; wound dressed three times.

Twentieth day.—To-day he passed down two pair of stairs, and walked several times across the yard, was highly de-

lighted with his performance, and felt not the least inconvenience from it; sleeps uniformly well during the night, and takes more food during the day than he did previous to the operation; continues the infusion of cinchona and sulph. acid as before, and directed to use dry lint as the dressing.

Twenty-first day.—Dressed the wound three times again to-day; it is nearly closed at the bottom; the power of motion in the right arm continues to increase: he can now move it with as much facility as the left, though not to the same extent: his strength is daily improving, and the operation is considered by all to have been completely successful; size of the tumor continues the same, no diminution of it having been perceived for the last week; the most prominent part of the tumor is yet below the clavicle; that above rises to about the height of the clavicle, which gives a little convexity to the place between the clavicle and trapezius muscle.

Twenty-second day.—Continues to improve in every respect; dressings renewed as often as yesterday; owing to the weather he has not left his ward to-day; pulse full and strong; temperature of both arms the same.

Twenty-third day.—A few minutes before the hour of visiting to-day, a message was brought that the patient was bleeding from the wound. The dressings were immediately torn off, and dry lint crowded into the wound, and slight pressure applied for a few minutes, when the hemorrhage ceased. The patient lost at this time, perhaps, about 24 ounces of blood, and was very much prostrated. Pulsation ceased in the radial artery of the left arm, and the countenance, gasping, and convulsive throes threatened immediate dissolution; all present apprehended the instant death of the patient. The first impression was, that the trunk of the arteria innominata had given way. The conjecture afterwards was, that the subclavian artery, from the diseased state of it, had not united by adhesion, and that the fluid blood from the tumour had regurgitated through its ulcerated coats. This appeared to be the most probable, both from the suddenness with which the blood ceased flowing, and the cause the patient assigned for the hemorrhage. He says that he felt weary of lying on

his left side and back; that he had just turned on the right, which he had not done before since the operation, agreeable to my request. At the instant of turning over, something arrested his attention, which caused him to turn his head to the opposite side suddenly, and he felt the gush of blood from the wound.

He was directed some wine and water frequently, which soon revived the circulation. The wound was dressed with dry lint and a compress. Pulse as frequent as natural, but very small and soft: he appears very languid, and complains of a numbness and painful sensation in his hands; says also that his back aches. During the last twenty-four hours he has taken a pint and a half of Madeira wine: he also took occasionally some egg and wine, which was immediately rejected from the stomach.

9, P. M.—Patient has lost his appetite, and appears considerably depressed; circulation very languid in the right arm; temperature of it is a little less than the left: directed a hot brick to be wrapped in flannel, and placed close to the arm. For a profuse perspiration which he has been in for the last three hours, he was ordered to be bathed with cold rum.

Twenty-fourth day, 6 A. M.—Slept the greater part of the night, and feels comfortable; is still languid, and has no disposition to eat any thing; says he feels sick, and once, last evening, vomited after drinking some wine and water.

Wound looks exceedingly pale, and the discharge is thin and fœtid, for which the carbon and yeast dressings were applied. He has vomited several times to-day, has some considerable difficulty in swallowing, and complains of a soreness in the wound upon pressure.

9, P. M.—Dressings removed; wound very pale; right arm of the natural temperature; feels occasionally a little numbness in the hand; has taken very little nourishment during the day; pulse natural as to frequency, but small and feeble; a few minutes after dressing the wound, information was brought that hemorrhage had ensued, and before it could be commanded, he probably lost four ounces of blood. For his restlessness and pain in the bones he was ordered two grains of opium.

Twenty-fifth day.—Has rested well during the night, and is perhaps a little better this morning. The repeated hemorrhages have debilitated him exceedingly, and from the irritable state of the stomach he can take only a very little nourishment. In the morning he was directed the effervescing draught, to be repeated every two hours; this allayed the irritability of his stomach, and enabled him to take a little breakfast.

His countenance has altered since the first bleeding surprisingly, his eyes are now heavy, and for the most part fixed; his cheeks are sunken, and an universal pallor has spread itself over his countenance; and from every appearance, a short time will terminate his existence. He has not vomited since early in the morning; is advised to take a little soup, and to drink freely of wine and water; dressings were renewed at 3 o'clock P. M. shortly after which the patient again bled, but not to exceed, however, an ounce. He was dressed with dry lint as usual.

11, P. M.—Patient has not as yet had any sound sleep, is restless and apparently distressed, although he says he feels no pain; breathing is attended with some difficulty; his hands and legs are continually in motion; pulse small and feeble.

Twenty-sixth day, 6 A. M.—Patient has not rested well; is occasionally falling into little slumbers, but is awaked by the least motion: Pulse small and feeble; respiration somewhat laboured; appears to be sinking; seems disinclined to take any thing; legs and arms constantly in motion.

11, A. M.—More feeble than before; has been forced to take a little chocolate; is evidently sinking; wound was dressed, but there was no secretion of pus in it; countenance of the patient foretels his approaching dissolution.

6, P. M.—Is extremely low; respiration very much laboured; is not able to articulate for the last three hours there has not been such continued throwing of the legs and arms about the bed: he lays in a state of insensibility; *temperature of the two arms the same to the last.*—My pupil, Abraham I. Duryee, the House Surgeon, (to whom I am indebted for the correct reports, and the most unwearied attention to this case, and

whose ingenious application of means for the recovery of many of my patients, will long be held by them in grateful remembrance,) having for a few minutes left the patient, he was sent for immediately, as there was another bleeding from the wound, by which he lost probably eight ounces of blood: during the whole time he did not manifest the least appearance of consciousness, nor was the least motion perceptible, except that necessary for respiration and circulation: the hemorrhage was stopped with lint, after removing the former dressings; respiration is now performed with the utmost difficulty, and the patient appears as if every respiration would be the last: he expired at half past six in the afternoon: the temperature of the right arm after death, appeared by the touch to be the same as the left; it was as natural and uniform as other parts of the body.

Examination of the Body.

About eighteen hours after death, I opened his body; there was considerable emaciation, and the surface of the wound was of a dark brown colour, and fætid; the wound was perhaps about one third of its original size; it had been enlarged by the pressure of lint into it, and other means to arrest from time to time the hemorrhage: the ulcer between his shoulders was ill-conditioned.

For the purpose of examining the condition of the aorta, where the arteria innominata is given off, as also the origin of the latter vessel, as well as the state of the pleura at the part about which the ligature had been applied around the artery, the chest was opened in the following manner. After removing the integuments and muscles from the fore part of the chest, the sternum was carefully sawed through, about an inch from its upper extremity, and raised by sawing through the ribs below the junction of the cartilages; this removed so much of the front part of the chest as to facilitate and expose fully to view the subsequent steps of the dissection; by thus leaving the clavicles attached, every part connected with the ulcer and great vessels could be seen and examined in situ.

The arch of the aorta and origin of the innominata being fairly exposed, not a vestige of inflammation or its consequences could be discovered, either upon them, the lungs, or the pleura, at any part. An incision was next made longitudinally into the aorta opposite the origin of the innominata, and upon introducing a probe cautiously up the latter vessel, it was seen to pass into the cavity of the ulcer; the innominata was then laid open with a pair of scissors into the ulcer; the internal coat of this vessel was smooth and natural about its origin, but for half an inch below where the ligature had cut through the artery, it showed appearances of inflammation, and there was a coagulum adhering with considerable firmness to one of its sides; showing that nature had made an effort to plug up the extremity of so large a vessel, after the adhesion, which no doubt had been effected by the ligature, was swept away by the destructive process of ulceration. The upper extremity of this vessel was considerably diminished in its diameter by the thickened state of its coats, occasioned by the surrounding inflammation. The innominata about half an inch from the aorta, and a little to the left side, gave off an anomalous artery large enough to admit a small size crow-quill.

The ulcer at the bottom was more than twice the size of the wound in the neck; it extended laterally towards the trachea and under the clavicle towards the tumour. The tripod of great vessels, consisting of the innominata, subclavian, and carotid arteries, to the extent of nearly an inch, was dissolved and carried away by the ulceration. The extremities of the two latter vessels were found also to open into the cavity of the ulcer. The upper surface of the pleura was very much thickened by the deposit of newly organized matter, for the safety and protection of the cavity of the thorax. Indeed, instead of having increased the danger of penetrating this membrane, the adhesive inflammation which preceded the ulcerative, seemed, by the consolidation of cellular membrane, and the addition of new substance, to have more securely and effectually shielded it from danger.

The internal surface of the carotid artery was lined with a coagulum of blood, more than twice the thickness of its coats,

and extending above the division into internal and external, so as almost to give them a solid appearance, insomuch that a probe could barely be introduced. The subclavian artery, internally and externally to the disease, was pervious. The brachial and other arteries of the right arm were of their common diameter, and in every respect natural. The external thoracic or mammary arteries, as they went off from the subclavian, were larger than natural: the right internal mammary was pervious, and of the usual appearance. Upon opening into the tumour, which now gave (from its small size) no deformity to the shoulder, the clavicle was involved in it, and found carious, and entirely disunited about the middle. A number of lymphatic glands under the clavicles, and particularly the left, were considerably enlarged, and, when cut into, very soft, and evidently in a state of scrophulous suppuration. No other morbid appearances were observed.

Several very important facts are established by this operation—facts which no surgical operation has ever before confirmed. It proves very conclusively, that the heart, the brain, and the right arm, were not the least injured by it, in any of their functions. To tie so large a vessel, so near the heart, might very reasonably be expected to occasion some immediate derangement in the actions of that organ: but it was neither increased nor diminished in its contractions, nor did it give rise to the least visible change in his respiration. All this could not have been anticipated. I apprehend there are no ingenuous surgeons, who would not have expected quite a contrary result. For my own part, I must confess, that this was to me an anxious moment, when I drew the ligature upon this artery. Indeed, so apprehensive was I that some serious, if not almost immediately fatal consequences, would follow, from arresting so large a proportion of the whole mass of blood suddenly, that I drew the ligature very little at first. But when no change took place in the actions of the heart, or respiration, I felt a confidence in completely intercepting the whole current of blood through this great vessel.

The brain in no operation has been deprived of so large a

quantity of blood as in this, and yet it suffered no inconvenience: from the effect of experiments however upon animals, I entertained no fear as to the consequences of my operation upon this organ.

The right arm, as the reports of the case from day to day will show, was in no want of a sufficient supply of blood for the purposes of its economy. That circulation went on to a degree adequate to its wants, the natural warmth and function of the skin fully prove; and although at no time could all be satisfied that a pulsation was perceptible in the radial artery, yet many at times were of the opinion, that an occasional undulatory motion was very evident: every one was confident of the distended and elastic feel of this artery, and could plainly see, from pressing on the distended veins upon the back of the hand, that a free circulation of blood was going on: but independent of these evidences, the natural warmth and free perspiration would alone be sufficient to establish the fact.

The route of circulation to the right arm was somewhat different, at first, from what took place after the ulceration had extended. The inosculation of the epigastric and internal mammary must have thrown a considerable retrograde current of blood through the latter vessel into the subclavian directly, and which in all probability passed on into the arm: after the ulceration had extended, this communication was cut off by the destruction of the subclavian to some distance. It was now that the principal supply of blood to the arm must have been derived from the free communication of the intercostals with the thoracic arteries. From the large size of these, as found in the dissection, I apprehend they must have afforded the principal channels through which the blood was conveyed to the arm after the operation: the anastomoses of the infra-scapular and other arteries of the axilla, more or less with small branches of the intercostals, as also the occipital, with small ascending branches from the subclavian, may have given some trifling assistance.

The ulceration which went on so insidiously at the bottom of the wound, was the sole cause of the death of my patient. While the upper part of the wound put on a favourable appear-

ance, and seemed healing, mischief was extending below. The separation of the ligature on the fourteenth day, spontaneously, without being followed by any hemorrhage for a number of days, and not until ulceration had extended, conclusively proves to my mind, that all the purposes of the ligature were completely answered—that adhesion was fully effected. Had it not been for the ulcerative inflammation, no doubt will be entertained, I think, by surgeons, but that my patient would have recovered. From occupation, his constitution was indeed very old, and with an ill-conditioned habit, every thing favoured the process of ulceration. The position of the wound may be said by some to favour this process, but in a sound healthy habit it would only retard the wound in its recovery, but would never promote ulceration.

The practicability and propriety of the operation appear to me to be satisfactorily established by this case: and although I feel a regret, that none know who have not performed surgical operations, in the fatal termination of it, and especially after the high and just expectations of recovery which it exhibited; yet I am happy in the reflection, as it is the only time it has ever been performed, that it is the bearer of a message to Surgery, containing new and important results.

Surgical account of the Naval Battle on Lake Erie, on the 10th of September 1813. By USHER PARSONS, M. D. Surgeon in the United States Navy.

[From the New-England Journal of Medicine and Surgery for October, 1818.]

MESSRS. EDITORS,

To such of your readers as are unacquainted with the duties of a surgeon in a naval engagement, and with the description of wounds that fall under his care, the following sketch may be acceptable.

Our force, employed in this action, consisted of nine vessels with about six hundred officers and men, and had been out of

port four weeks, either cruising or lying at anchor in Put-in-bay; a safe harbour, among a cluster of islands near the head of the lake. The crews left port in good health, but shortly after were visited with an epidemic, which spread through the fleet, attacking about twenty or thirty in a day. It answered the description of a bilious remittent fever, was of short duration, except in a few instances, in which it degenerated into a typhus, and in only one instance proved fatal. So rapid were the recoveries, that, of above two hundred cases, only seventy-eight were reported unfit for duty on the day previous to the action. Thirty-one of these were on board the *Lawrence*, and about the same number on board the *Niagara*, their whole crews being about one hundred and forty men each.

About twelve o'clock, on a clear pleasant day, we met the enemy. The action soon became general, and was severely felt; especially on board the *Lawrence*, the flag ship; two of the enemy's largest vessels engaging her, at a short distance, for nearly two hours; part of which time the men fell on board of her faster than they could be taken below. The vessel being shallow built, afforded no cock-pit or place of shelter for the wounded; they were therefore received on the wardroom floor, which was about on a level with the surface of the water. Being only nine or ten feet square, this floor was soon covered, which made it necessary to pass the wounded out into another apartment, as fast as the bleeding could be stanch'd either by ligatures or tourniquet. Indeed this was all that was attempted for their benefit during the engagement, except that in some instances division was made of a small portion of flesh, by which a dangling limb, that annoyed the patient, was hanging to the body. Several, after receiving this treatment were again wounded, among whom was midshipman Lamb, who was moving from me with a tourniquet on the arm, when he received a cannon ball in the chest; and a seaman brought down with both arms fractured, was afterwards struck by a cannon ball in both lower extremities.

An hour's engagement had so far swept the deck, that new appeals for surgical aid were less frequent; a remission at this time very desirable both to the wounded and myself; for the

repeated request of the Commodore, to spare him another man, had taken from me the last one I had to assist in moving the wounded; in fact many of the wounded themselves took the deck again at this critical moment. Our prospects nevertheless darkened, every new visitor from the deck bringing tidings still more dismal than the last, till finally it was announced that we had struck. The effect of this on the wounded was distressing in the extreme; medical aid was rejected; and little else could be heard from them, than "sink the ship" — "let us all sink together." But this state of despair was short. The Commodore, who was still unhurt, had gone on board the Niagara, and, with the small vessels bearing down upon the enemy, soon brought down the flags of their two heaviest ships, and thus changed the horrors of defeat into shouts of victory. But all the wounded were not permitted to mingle in the joy. The gallant Brooks, and some others were no more. They were too much exhausted by their wounds, to survive the confusion that immediately preceded this happy transition.

The action terminated shortly after three o'clock; and, of about one hundred men reported fit for duty in the morning, twenty-one were found dead, and sixty-three wounded. The wounded arteries occupied my first attention, all which, except where amputation was required, were rendered secure before dark. Having no assistant, (the surgeon on board with me being very sick,) I deemed it safer to defer amputating till morning, and in the mean time suffered the tourniquets to remain on the limbs. Nothing more was done through the night than to administer opiates and preserve shattered limbs in a uniform position. At daylight a subject was on the table for amputation of the thigh, and at eleven o'clock all amputations were finished. The impatience of this class of the wounded, to meet the operation, rendered it necessary to take them in the same succession, in which they fell. The compound and simple fractures were next attended to, then luxations, lacerations and contusions, all which occupied my time till twelve o'clock at night.

The day following I visited the wounded of the Niagara, who had lain till that time, with their wounds undressed. I

found the surgeon sick in bed, with hands too feeble to execute the dictates of a feeling heart. Twenty-one wounded were mustered, most of whom were taken on board the *Lawrence* and dressed, and afterwards such as were lying in like manner on board the small vessels. In the course of the evening the sick were prescribed for, which was the first attention I had been able to render them since the action.

The whole number of wounded in the squadron was ninety-six. Of these twenty-five were cases of compound fracture, viz. of the arm, six; of the thigh, four; of the leg, eight; of the shoulder, three; of the ribs, three, and skull, one. Of simple fracture there were four cases; viz. of the thigh, leg, arm and ribs. Grape-shot wounds were three; and cannister four. The splinter and lacerated wounds, large and small, were thirty-seven. There were two cases of concussion of the brain; three of the chest, and two of the pelvis. The contusions large and small were ten, and sprains six.

Of the whole number, three died; viz. midshipman Claxton with compound fracture of the shoulder, in which a part of the clavicle, scapula and humerus was carried away; a seaman with a mortification of the lower extremity, in which there had been a compound fracture, and another with a fracture of the skull, where a part of the cerebral substance was destroyed.

The compound fractures of the extremities were much retarded in their cure, by the frequent displacement of the bones, by the motion of the ship in rough weather, or by some other unlucky disturbance of the limb. In this way the bones in one case did not unite, until after forty days had elapsed, and in two or three other cases, not till after twenty-five days. The delay of amputations already mentioned had no effect on the success of the operations. Every case did well.

There were not more than two very singular wounds, or such as would be unlikely to occur in any sea engagement. In one of these cases, a grape shot four times as large as a musket ball, passed under the pyramidal muscle, without injuring the peritoneum. In the other, a cannister shot twice the size of a musket ball entered the eye, and on the fifth or sixth day

was detected at the inside of the angle of the lower jaw and cut out. In its passage it must have fractured the orbital plate of the upper jaw-bone, the orbito temporal process of the sphenoid bone, and passing under the temporal arch, inside the coronal process of the lower jaw, must have done great injury to the temporal muscle, and other soft parts, lying in its way.

The recovery of so great a proportion of the wounded may in a great measure be attributed to the following causes: First to the purity of the air. The patients were ranged along on the upper deck, with no other shelter from the weather, than a high awning to shade them. They continued in this situation for a fortnight, and when taken on shore, were placed in very spacious apartments, well ventilated. *Secondly*, to the supply of food best adapted to their cases, as fowls, fresh meat, milk, eggs and vegetables in abundance. The second day after the action, the farmers on the Ohio shore brought along side every article of the above description, that could be desired. *Thirdly*, to the happy state of mind which victory occasioned. The observations which I have been able to make on the wounded of three engagements, have convinced me, that this state of mind has greater effect, than has generally been supposed; and that the surgeon on the conquering side will, *cæteris paribus*, always be more successful, than the one, who has charge of the vanquished crew. *Lastly*, to the assistance rendered me by Commodore Perry and Mr. Davidson. The latter gentleman was a volunteer soldier among the Kentucky troops, and engaged to serve on board the fleet during the action. After the action he rendered the wounded every aid in his power, continuing with them three months. And the Commodore seemed quite as solicitous for their welfare, as he could possibly have felt for the success of the battle.

Experiments and Observations relative to Vision; by Marshal^l Hall, M. D. of Nottingham, formerly Senior President of the Royal Medical Society of Edinburgh.

[From the Journal of Science and the Arts, No. X. for 1818.]

THE following detail is nearly confined to a series of observations and experiments made by myself. I have been induced to adopt this plan, partly from the difficulty of meeting with persons sufficiently interested in their results to prosecute experiments at once nice and difficult in themselves, and requiring a certain degree of the power and habit of abstraction, for their performance; but principally from a peculiarity in my own vision, by which I am enabled to give the subject of this paper a peculiar illustration.

The peculiarity of vision to which I allude, consists in an ability to adapt the *left* eye for distinct vision at shorter distances than the *right*, and in an incapacity for adapting the *left* eye for distinct vision at great distances, whilst the *right* eye possesses the power of adaptation for distinct vision at very considerable distances. The nearest distance at which a bright point is distinctly seen by the right eye is $4\frac{1}{2}$ inches; but by the left eye the point is seen with perfect distinctness at the distance of $3\frac{1}{2}$ inches. The same point is seen distinctly by the right eye at the distance of 17 inches; by the left it is seen indistinctly at any distance beyond 14 inches. With the right eye I distinguish each small branch and each leaf on a tree planted about thirty yards from my window; with the left eye these objects are seen in the most indistinct and confused manner. A distant light seen distinctly, or as a point nearly by the right eye, appears magnified into a large star to the left. The distant object seen thus indistinctly by the left eye, immediately acquires distinctness by the use of a concave lens.

A number of experiments have convinced me that, in myself at least, ordinary vision is performed principally by one eye alone, the left eye being chiefly employed and adapted for distinct vision at short, and the right eye, at long distances;

whilst the axis of the other eye is merely directed to the object, in order to prevent the confusion and double vision which would arise from the different direction of the two eyes. In proof of this observation I may observe, that when the eyes are directed to a distant object, as the tree before my window just mentioned, any *intervening* object, placed within certain limits with respect to distance, and seen of course double, appears *indistinct* to the *right* eye, but perfectly *distinct* and with a well defined outline, to the *left*. On the contrary, when the characters on a printed page placed at the distance of about eight inches from the eye, are observed, whilst the point of a pen-knife placed at the distance of six inches is seen single and distinctly by both eyes, each word and line is of course seen double, and the *right* part of the double image, or that seen by the *right* eye, appears distinct, whilst the *left* side of this image, or that arising from vision by the *left* eye, is seen indistinctly and obscurely.

When the eyes are fixed on a distant object, and an intervening object placed also at a considerable, although at less distance, is observed, it is seen nearly distinctly by the *right* eye, and less distinctly by the *left*; and there is a particular intervening distance at which it is seen equally indistinctly by both eyes. The same remark applies, *mutatis mutandis*, to the experiment in which the characters of a printed page are placed at the distance of eight inches from the eyes, and observed whilst the eyes are fixed for single and distinct vision at a shorter distance; if the less distance be nearly eight inches, the characters of the printed page placed beyond it, are seen either almost distinctly by the *left* eye, or equally indistinctly by both eyes.

These remarks appear to show that, in myself, as the right eye is endowed with a longer, and the left with a shorter sight, so, in observing near or distant objects, the left or the right eye is principally employed, and most adapted for distinct vision, whilst the axis of the other eye is directed to the object, in order to obviate the double vision which would take place were this axis allowed to take any other direction; I

may therefore be said to *look* at the object with both eyes, but to *examine* it with one only.

Having made this statement respecting the condition of my own eyes, and of their different capacity for adapting themselves for distinct vision at different distances, I now proceed to the detail of some experiments and of some cases of vision, in which the object is not only seen indistinctly and with an undefined margin, but also *fringed with the prismatic colours*.

In the first place I may observe, that in the cases of *indistinct vision* already described, if the object be opaque and well defined in itself, its borders are manifestly tinged by a decomposition of the rays of light. This fact, observed in general in the observations and experiments already described, is evinced still more distinctly in the following manner.

If both eyes are fixed, adapted for single and distant vision, at the distance of eight feet, and if an intervening object *within* the distance of about six inches, or *beyond* that of about twenty inches, be glanced at, the latter object is seen indistinctly and bordered with the prismatic colours, by *both eyes*, but in a different degree and in a different manner by each. But if, in this experiment, the intervening object be placed beyond the distance of *six* inches and *within* that of twenty, the *right* side of the double image, or that seen by the *left* eye, is distinct and free from colours; whilst the image induced by the impression of the light on the *right* eye, appears indistinct and fringed as before. By three other gentlemen, the more general observation has been made, that, whilst the eyes remain adapted for the single and distinct vision of a more distant object, a nearer one, a word in capitals, on a neatly printed page for instance, is observed to be bordered by the prismatic colours from a decomposition of the rays of light.

In these experiments a straight line on a printed page becomes doubled, presenting the appearance of two light blue lines inclosing a line or space of a brightish yellow colour; a dot becomes a small circle of light blue having a centre of yellow; an *o* becomes three concentric rings,—of blue, yellow, and blue; and if two *o*'s be viewed nearly together, as in the word GOOD, the light blue borders are seen to coalesce at

the parts which approach each other, in the manner of two penumbraë, and to give origin to an appearance of a deeper blue.

These experiments have been diversified in the following manner. The eyes have been fixed on an object placed near them, so as to see it singly and distinctly. They have then been glanced towards another object, such as a word on a printed page, placed at a greater distance. The latter object is of course seen double; the *right* side of the double image, now induced by an impression made on the *right* eye, is distinct and free from colours; the *left* is indistinct and fringed with the prismatic rays. The three gentlemen before alluded to, observed the appearance of coloured fringes in general, whenever the eyes were adapted for distinct vision at a near distance, and glanced at a printed page or other proper object placed somewhat beyond the former.

Having thus ascertained that, when the eyes were glanced at a well defined object, situated at a different distance from that at which they are at the moment adapted for distinct vision, whether *greater or less*, the rays of light are decomposed in their passage to the retina; a set of experiments were next made by properly placing concave or convex lenses, or plane, convex, or concave mirrors, with respect to the eyes and the object viewed, so as to vary the degree of divergency of the rays proceeding from them. When the object is seen distinctly by the eye alone, it is seen indistinctly and fringed by the decomposition of the rays of light, when viewed by means of any of these instruments, the conformation of the eye remaining unchanged: and *vice versa*, when seen distinctly by means of any one of these instruments, it appears indistinct and coloured without them.

I have observed, that in myself there is a certain distance with regard to each eye, and different for each, being *greater* for the *right* than for the *left*, at which an object cannot be made to appear fringed with colours by attempting to fix the vision at a point *beyond* it. Beyond this distance the margins of a small object cannot be seen distinctly by either eye; by the *left* they are seen indistinctly and slightly fringed with colours; with regard to the *right*, the distance alluded to is too

great to allow of a small object being examined with sufficient minuteness.—There is in the same manner, a certain short distance with respect to each eye, and *less* for the *left* than for the *right*, at which an object cannot be made to display the fringe of prismatic colours by endeavouring to fix vision at a still smaller distance.—The distances just alluded to, are the *limits* of distinct vision for each eye respectively.

It would appear from this view of the subject, that whenever the eye is glanced at an object situated at a distance different from that at which the eyes are adapted for distinct vision, it produces the appearance of prismatic colours, by decomposing the rays of light and leaving this dispersion without connection. In distinct vision, on the contrary, the decomposition of light appears to be accurately connected, so as to leave no appearance of prismatic colours. In distinct vision the eye appears to be perfectly achromatic; in the cases of indistinct vision which have been described, it appears to have lost its achromacy. What is the rationale of this phenomenon? Before I offer any conjectures in reply to this question, I wish to make a brief statement of some additional observations on the subject in general.

It is well known that, *cæteris paribus*, the pupils are smaller when the eyes view an object placed at a near, than at a greater distance. This fact is also observed when the eyes are adapted for distinct vision at these distances respectively; and when an object at a greater or less distance, than that at which the eyes are fixed for distinct vision, is glanced at, as in the preceding experiments, the conformation of the eyes remaining the same, not only is the mutual disposition and relation of the humours different, but the size of the pupil is also different from that which is proper to the eye when adapted for distinct vision at the distance of this object,—being less in the former and greater in the latter case.

This circumstance may have an influence in inducing an unconnected dispersion of light, as will be further noticed hereafter. At present I wish to add another remark which may be found to throw some light on the same point. An object is seen smaller by *one* eye than by *both*; in myself by the

right than by the *left*; and it is seen smaller when the eyes are fixed for distinct vision at a distance *greater* or *less* than that at which the object is placed. In the first case the pupil is seen to become larger; in the second, the right eye is known to be of less refractive power; and in the two last instances both the size of the pupil and the conformation of the eye are changed,—the pupils being larger and the refractive power of the eyes less, in the former case, and the reverse in the latter.

From this view of the subject it would appear, that a certain size of the pupils and a certain co-adaptation of the humours of the eye, are necessary for distinct vision, for securing the object viewed from a fringe of the prismatic colours, and for insuring its due apparent magnitude. In further confirmation of this view, some experiments were made with the application of the extract of belladonna to the eyes, the general result of which I proceed to state. The sight is rendered larger, as has been stated by other experimentalists, and it is no longer perfectly achromatic:—a pen, for instance, cannot be mended at all, as indistinct and coloured vision is induced by bringing the object near enough to the eye to admit of its being seen distinctly in the ordinary state of the eye; but the eye is assisted by a convex lens, and a person naturally short-sighted is enabled for the time to dispense with the use of the concave glasses,—and the vision becomes distinct and free from colour, partly on closing one eye, but still more on viewing the object placed even still nearer, through a small perforation in a card; but the indistinctness of vision and the dispersion of light are again induced by bringing the object viewed still nearer to the eye. Distant objects are also seen indistinctly and coloured, a dark coloured object having appeared to three persons who have performed this experiment, to have been tipt and fringed with purple.

There is a certain distance at which an object is seen tolerably distinctly with both eyes, under the influence of the belladonna; at a nearer distance the object appears indistinct and coloured to *both* eyes, but becomes distinct and colourless when viewed by *one* only; at a still nearer distance it is seen

indistinctly and coloured by one, but becomes distinct and free from colour, on interposing a card perforated with a small hole.

The convex lens and the perforated card equally prevent indistinctness and dispersion, but on different principles; the former converging, and the latter excluding, the extreme rays of the pencil of light.

I am indebted for the repetition of some of the experiments with the extract of belladonna, which deserve to be further prosecuted, to Dr. J. Davy, and Dr. A. Fyfe; to whom, after an interval of five years, I now beg leave to return my best thanks for their friendly assistance.

After this detail of experiments, it may not be wrong to conclude this Paper by the following observations and queries, as they may induce other experimenters to prosecute the subject.

It is still a matter of dispute, whether the human eye be perfectly achromatic. If any dispersion of the rays of light in their course to the retina, in ordinary vision, do in reality occur, it is in so limited a degree as to occasion no inconvenience. Those physiologists, therefore, who consult the *sense* alone, are of opinion, that the achromacy of the eye is perfect; and it has been attempted to explain this achromacy on the principle of the construction of the achromatic telescope, which, indeed, it is supposed to have suggested. But the idea that the humours of the eye, are so co-adapted, that the dispersion produced by one is corrected by a contrary dispersion occasioned by the other, is probably erroneous. In the achromatic glasses, the dispersion induced, by a convex lens, is remedied by a similar but contrary dispersion effected by a concave lens,—or, at least, the *principle* thus stated is secured. In the construction of the eye, however, the rays, in their course to the retina, appear only to undergo *successive convergencies*, at least by *refraction*; and consequently the degree of dispersion is also augmented successively, at each transition of the rays of light from one humour to another.

There is a part of the eye, however, the action of which has not perhaps been *fully* ascertained.—The iris is supposed to regulate the quantity of light admitted to the retina, and in

vision at near distances, to exclude those rays which would otherwise fall with too great obliquity on the crystalline lens. But are there not other effects of the iris, not sufficiently adverted to, in the inflection and dispersion of the rays of light at the edges of this part of the eye?—and may not these effects be similar to the operation of the concave lens, in the achromatic eye-glass? A small perforation in a card induces an inflexion and a dispersion of the rays of light which pass through it; may not the finely fringed edge of the iris induce these changes in a still greater degree? Those coloured rays of light which are most refrangible, are also the most inflectible. Now when the light is intense, or when any divergent rays of light strike the eye, and the eye is so conformed as to induce great convergency of the rays by refraction, and, consequently, when the dispersion of the light must be great and very obvious, the pupil is then most contracted, and the inflective and dispersive effect of the iris, greatest. May not this effect of the iris *counteract* the dispersion of the rays of light induced at their refraction by the humours of the eye? And may not this operation of the iris thus insure, in ordinary vision, the achromacy of the eye?

On this supposition we should conclude, that whenever the disposition of the humours of the eye, and whenever the size of the pupil, was not in just proportion mutually and relatively to the intensity and direction of the rays of light, an unconnected dispersion of the rays of light would occur, and the eye would cease to be achromatic. Is not this in effect the case, in the experiments which have been detailed in this Paper, in which a manifest uncounteracted decomposition of the rays of light actually occurred?

Case of a Child aged six months, who swallowed a double-bladed Knife without Injury.

[From the Journal of Science and the Arts, No. X. for 1818.]

FEW subjects are more interesting, than the contemplation of the wonderful manner in which the human frame accommodates itself to the various violences to which it is subject: compression upon the brain; the effusion of fluids into the pericardium, thorax, and abdomen; a musquet ball or other extraneous body in the midst of muscle, &c. all may remain a considerable length of time, without necessarily proving destructive: the human stomach is daily exposed to severe trials by the glutton and the drunkard, and daily it evinces its power of contending against such attacks, although it ultimately falls a sacrifice to their repetition or continuance.

If we are surprized at the efforts it is capable of in such instances, how much more must we wonder at those remarkable powers of adaptation, by which it is sometimes enabled to remain uninjured, when such substances as nails, pins, knives, &c. are swallowed by accident.

The painful and ridiculous feat of the Indian jugglers in passing a blunt piece of iron, under the name of a sword, into their stomach, which certainly contributes to render them short lived; and the instances we have of men actually swallowing knives to the number of 12 or 13, for a reward of spirits, or wine, do not come within the intention of these observations: they are meant chiefly to apply to those cases where foreign substances have been inadvertently swallowed.

In the Transactions of the Royal Society, cases are recorded, of knives being swallowed by adults, which forced their way through the coats of the stomach by producing inflammation, &c. or were removed by incision: we have also many histories of nails, padlocks, knives, &c. being swallowed without producing fatal consequences; but I am not aware of any case being recorded where a knife remained so *long* in the stomach of so *young* a child, as in that of which I now give

the particulars; and which, on that account, deserves to be preserved, if it has not already been communicated by the very respectable persons who, with myself, were witnesses to the facts.

CASE.

March 16th, 1802. A child of Jonathan White's, Southgate, Chichester, about *six months* old, had a small double-bladed knife, about two inches and a half in length, given it to play with. On the return of its mother to the room, she sought in vain for the knife, in all parts of the cradle in which the infant was laying: the child expressed some uneasiness at the stomach, from which the mother concluded it had swallowed the knife; the bowels were kept lax by the use of castor oil; and the fæces soon began to grow black. The child took no food, but milk; seemed often very uneasy in its stomach, and had slight febrile indisposition; yet it continued to look well, and was sufficiently fat.

May 24th. The shortest blade was discharged by the bowels; the back of it very much corroded, its edges being ragged, uneven, and saw-like: the rivet was entirely dissolved. The general state of the child's health, as stated above.

June 16th. The child, after being for a day or two more than usually uneasy, and rejecting every thing offered as food, brought from its stomach, in vomiting, one side of the horn handle about two inches in length, very much softened and bent double: a small bit of iron was passed a few days afterwards by stool. He frequently expresses great pain in his stomach and bowels, and starts much when asleep; has retained no nourishment for three days, and now looks much emaciated.

July 8th. The child more emaciated, takes little food, and unless when quieted by a decoction of poppies expresses more pain, continually writhing. Its bowels are lax, and the stools have a black appearance, and the abdomen exhibits externally a degree of inflammation. His pulse is soft and moderate while asleep; the skin feels rough; has voided nothing since the horn handle.

July 24th. To day he passed a bit of iron, which was about

half an inch in length, of a wedge-like shape, much corroded, and full of holes, and appearing to have been the large blade.

August 11th. The child has been in a convalescent state for the last fortnight, grows fatter, and looks much better; has been more quiet, although he has not slept much; the decoction of poppies has been omitted for some time past; the pulse full and strong; sucks more heartily, and now eats sopped bread three or four times a day. Yesterday and to day it has been more uneasy: about five o'clock in the evening vomited up its milk, together with the back of the knife, $2\frac{1}{2}$ inches in length, pointed, and corroded at one end; the *other* nearly perfect, and *first* presented itself at the mouth; soon after, it vomited the other side of the horn handle, softened, the edges uneven, and dissolved. The child was much exhausted by its efforts, and soon fell asleep. The stools are some days of their natural colour, and sometimes black.

Dec. 20th. The child is now in perfect health, remarkably robust, and has not experienced a day's illness since August.

The Notes from whence I have taken the above particulars were made at the moment by Mr. J. N. Shelly, now a surgeon in the army, who was at that period my senior, and whose observations I can corroborate most fully.

Whether we look on this Case, as proving the possibility of so large a substance as a knife remaining so many months without material injury, in the stomach of so young an infant, or whether we consider the state in which the separated parts of the knife, at distant intervals, came away, it affords equally curious and useful matter for contemplation. It shows the remarkable power possessed by the gastric juice, even in so young an infant, of acting upon the metal, by which the rivets of the knife and the sharp edges of it were dissolved, and the life of the individual saved.

Manifold are the precautions which the adult takes, to preserve his health and to guard against accidents; *he* is capable of explaining the nature of his sufferings, readily takes the

most nauseous drugs to subdue disease, and submits to severe pain to obviate the effects of accident; but the infant cannot describe its feelings, cannot be treated with certainty, and will not endure restraint to effect a cure of the consequences of accidents; how bountiful, then, is Providence, in guarding it from the accidents of birth, by rendering its bones flexible, in restoring union of fractures by the rapidity with which callus is secreted, and in enabling the stomach to meet so successfully, such calls upon the solvent powers of its juices, as are exemplified in this Case.

W. H. BANKS, *Surgeon, Royal Navy.*
Ryde, Isle of Wight, May 8th, 1818.

History of the Excision of a Portion of the Ribs and Pleura;
by M. RICHERAND, Principal Surgeon of the Hospital St.
Louis.

[From the London Medical and Physical Journal, for October, 1818.]

M. MICHELLEAU, of Nemours, for the space of three years, laboured under a cancerous tumour in the region of the heart; the extirpation of which was performed by a surgeon in the neighbourhood in the month of January. On removing the first dressing, a bloody fungus appeared in the centre of the wound, which, although cauterised daily, rapidly increased. A second operation was tried; the parts were excised more deeply. After having exposed the ribs, the surgeon cut down even to the pleura; new fungosities however appeared, and increased, notwithstanding repeated cauterisation, by means of which their removal was attempted. In despair, from the want of success after such painful operations, the patient came to Paris towards the end of March, with a determination to undergo any suffering, with the hope of being delivered from a horrible evil, and of escaping an apparently certain death.

At this period, an enormous fungus arose from the wound; it was brown and soft, exuding an abundant reddish sanies, so

fœtid* that it was impossible to remain a quarter of an hour with the patient without renewing the air of the apartment: the pains, nevertheless, were moderate; there was no colliquative perspiration or diarrhœa. In this state of things, it was determined to cut away that portion of the ribs from which the cancer originally took its birth. I did not conceal from the patient the probability that I should be obliged to remove a portion of the pleura: he did not hesitate to submit to the operation, the serious nature of which he was fully able to appreciate.

On the 31st of March, I proceeded upon this bold undertaking with the friendly assistance of my colleague, Professor Dupuytren, and by other persons who gave me their co-operation. I began by enlarging the wound, giving it a crucial form; I thus laid bare the sixth rib, which appeared swelled and rough for four inches in length, with a blunt-pointed bistoury, whose point I conducted along its upper and lower margin; I cut the intercostal muscles; then, with a little saw, I divided the bone at the two extremities of the diseased portion, and removed it from the pleura by a spatula. This I effected with an unexpected facility, in consequence of the thickening of the pleura beneath the bone, which became manifest in the sequel of the operation.

The seventh rib was discovered in the same extent, isolated and detached in the same manner, but with much more difficulty and slight laceration. The pleura then appeared evidently diseased; a thickened fungus giving rise to the tumour which occupied the space between the two portions of the ribs which I removed. The cancerous structure prolonged itself above the sixth rib, so that the membrane appeared diseased for the space of about eight inches square of its extent. Not to remove this, would have left our operation incomplete. Each of the assistants provided himself with the means of arresting the hæmorrhage we expected in an alarming degree from the section of the intercostal arteries. I cut the pleura with curved scissors; and, whether the section performed by this instrument (which acts by pressing rather than incision) occasioned the retraction of the vessels, or whether their calibre had been

diminished by antecedent cauterisations, not a drop of blood flowed. The external air at this moment rushed rapidly into the chest, and threatened immediate suffocation. This I endeavoured to diminish, by covering as speedily as possible the chest, surrounding the opening with a compress spread with cerate; over this I placed a large and thick pad of lint, and the whole was confined by a moderately tight bandage. The anxiety and difficulty of breathing were extreme during twelve hours after the operation; the patient passed the entire night sitting in an erect posture; towards the morning, sinapisms, applied to the soles of the feet and the inner part of the thighs, relieved the respiration; the pulse became stronger, and the strength of the patient increased. The only liquid or nourishment allowed was an infusion of linden flowers and violets, mixed with a little orange-flower water, and sweetened with syrup of gum arabic.

Three days passed in this manner. The fever was moderate, but the oppression deprived the patient of sleep: the first dressing was removed ninety-six hours after the operation. The pericardium and lungs had contracted an adhesion with the circumference of the quadrilateral opening, *a sort of window made* in front of the heart; the adhesion happily was not complete between the pericardium and the lung from the sixth to the twelfth day; by this means, an abundant flow of serum came from the chest each dressing, probably not less than a pint (English), half-a-pint (French), in the twenty-six hours. On the thirteenth day, this serosity, produced by the inflammation of the surfaces, ceased to flow; and, on the eighteenth, the adhesion was complete between the lung and pericardium; the air immediately ceased to enter into the wound; the patient could lie on his side; the appetite and sleep were entirely re-established. The wound diminished rapidly, and presented a most favourable appearance; on the twenty-seventh day after the operation, the patient returned home, with directions to have the part well protected when the cicatrix was completed.

I did not suffer the opportunity to escape me of demonstrating anew the perfect insensibility of the heart and pericardium: the contact of the fingers to these organs was not perceived by

the patient. The pericardium in man during life is so transparent, that the heart is as readily distinguished as if it were under a perfectly diaphanous glass; so much so, that we sometimes thought the envelope was wanting. This transparency is wanting in the dead body; and, in this respect, may be compared to the cornea of the eye, which becomes obscured and opake at the approach of death.

A large opening, with loss of substance, made in the parietes of the chest, not being necessarily followed by suffocation, or by dangerous inflammation of the thoracic viscera, we might, in a case where the individual labours under dropsy of the pericardium, make an opening in the front of the heart; an opening which would permit not only the evacuation of the water, but radically to cure the disease by the production of adhesive inflammation of the surfaces, by means similar to those employed for the cure of hydrocele. This may appear a rash enterprise; but how many operations, reputed impossible fifty years back, are now followed by the most brilliant success.

On the Dangers of Dissection.

By M. PERCY.

[From the New Medico-Chirurgical Journal for October, 1818.]

THE accidents to which the Anatomist is liable in the prosecution of his studies may be divided into two classes: those resulting from the putrid gases extricated from the dead animal matters, and acting on the system generally; and those from inoculation of a septic principle, in wounds.

1. Cullen had long ago observed, that anatomical students enjoyed excellent health, in general, notwithstanding their being so much among the exhalations from dead bodies. Professor Bosquillon in one season dissected nearly 600 bodies, of all ages, sexes, and conditions; and states, that of five hundred pupils who passed from six to eight hours daily in dissecting, three only contracted disease from thence, and but

one died. It is very different with them in their pathological investigations. Out of one hundred pupils employed in hospital service, sixty were seized with hospital fever. But we are not to infer from these premises, that no danger attends the dissection of bodies. A well-known and melancholy example will prove the contrary. Dr. Chambon, in order to demonstrate the liver and its appendices, laid open the abdomen of a subject considerably advanced in decomposition. A horrible gas immediately issued forth, and nearly overwhelmed the demonstrator and four others. One of these, M. Corion, fainted away, was carried home, and died in sixty hours! The celebrated Fourcroy, who was also present, would, it is supposed, have shared the same fate, had it not been for an exanthematous eruption which was strongly out on him at the time. Messrs. Laguerenne and Dufresnoy remained long ill, and the latter was never restored to health afterwards. The Professor escaped best, although he proceeded on with the dissection. In the night he had a fever, which ended in a copious perspiration towards morning, and left him free from complaint.

At Dijon, in 1773, the accidental opening of a coffin in which a body had been six weeks buried, affected 114 people dangerously, and of whom 18 died. Many individuals have perished from the escape of animal gases of this kind; instance the grave-digger of Montmorency. We shall not recount what passed during the evacuation of the Cemetery of the Innocents, where, among others, Thouret contracted a fever that nearly terminated his existence.

But, fortunately, these instances are rare, and we see thousands of Anatomists enjoy good health among the corpses in all states of putrefaction. Who has dissected more, or prosecuted pathological anatomy more, than our venerable colleagues Tenon and Portal, who are blessed with a green old age? Look also at Walter, Mascagni, Scarpa, Sæmmering, Pelletan, Deschamps, Laumonier, Chaussier, Boyer, &c. who have spent nearly half their lives among dead bodies, and yet promise a happy longevity.

It is said that Claude Perrault fell a sacrifice to the dissection of a putrid camel; and that Taren shared the same fate

from demonstrating a human body. We may add, that the memorable Bichat would now have been living, had he not given himself up too much to dissection and macerations of morbid parts. Indeed, we see students daily destroyed by too enthusiastic a pursuit of anatomical studies.

2. But it is from inoculation of dead matters that the great danger is to be apprehended. Dr. Chambon relates, that having pricked his middle finger with the sphæroid bone of a skull that had been long in maceration, he was soon afterwards seized with the most intolerable pain, and inflammatory swelling of the fingers and hand, and with a number of acute and uneasy sensations, which he compares to those of the most violent gout. He experienced, in 1810, a similar train of accidents, from dissecting a body while there was a slight excoriation of the middle finger. Constitutional symptoms of great violence supervened, with disturbance of the mental faculties, great irregularity of the pulse, and extreme debility.

It has been long observed, that one of the most striking phenomena attending the accession of plague and other pestilential fevers, was a peculiar mental despondency, and disturbance of the sensorial functions. The very same takes place in the inoculation of septic poison in dissection, as was almost fatally exemplified in the person of the illustrious Corvisart, in 1786. This distinguished ornament of the profession pricked his finger while inspecting a dead body. Presently the whole arm swelled to an enormous size. Desault was obliged to make repeated and deep incisions in the tumefied parts, which Corvisart bore with considerable firmness, although he had experienced the peculiar mental despondency appertaining to the disease, even to *despair*.—"Circonstance qui affligea plus vivement les temoins assidus de sa triste situation, que tous les autres ravages qu'avait produits le virus inoculé."—Finally, however, the skill of Desault (whose friendship for the patient did not arrest the salutary course of the knife, or prevent him from acting the determined surgeon), triumphed over the effects of the poison, and restored to health our beloved colleague.

In these accidents, the train of symptoms is not always

equally *painful* and dangerous. I knew a student, who, having cut himself while tracing the nerves on a subject which he had kept for some weeks, died, in three days, in a state of the greatest debility, but without experiencing any pain, although gangrene occupied the whole arm. In other instances death has taken place at a much earlier period. It was probably in this way that Professor Leclerc perished in thirty-six hours, after feeling the pulse of a patient ill with malignant fever. His finger was excoriated, and the sick man's arm was covered with perspiration. Perhaps, however, his death might be owing, as in the case of Corion before mentioned, to the *pulmonary* absorption of a deleterious gas from the diseased body.

M. Chambon states, on the authority of several historians, and on the testimony of the President De Thou, that the Peruvians, animated with just vengeance against the Spaniards, dipped their arrows in the *sanies* flowing from the putrifying bodies of their unfortunate comrades, in order to render the wounds of their oppressors more certainly and more speedily fatal.

M. Huzard observes, that no carcasses putrify so quickly, and emit so much dangerous exhalation, as those of herbivorous animals, as the horse, the ox, &c. He has seen numerous fatal instances of this poison among the veterinary students, when they happen to wound themselves in dissecting these animals, even within three or four days after death.

Treatment. We may here observe, with the celebrated Fabricius Hildanus, that it is not the virulent matter of poison, such as it appears to the eye, which is so quickly absorbed, and proves so rapidly fatal. It must be some subtle principle contained in it, and which eludes the sight. This view of the subject leads to the surest mode of arresting the evil, viz. either by removing the part, or destroying its organization, so that the process of absorption may be prevented. It is the cautery, either actual or potential, that the best anatomists of the present day rely on. As the wounds of dissection are generally small, a red hot needle will usually be sufficient. But, as these wounds are sometimes made by needles, or the points of hooks, it is not so easy to apply the cautery to their bottoms.

Here we may take a lesson from mechanics; who, when they prick their fingers or hands with pointed instruments, immediately throw a little oil on a piece of burning coal or charcoal, and hold the wounded part over the smoke, which cauterizes the wound completely.

For several years past, the precept and example of Professor Chaussier have been adopted in the anatomical schools of Paris; viz. each student keeps constantly in his pocket a small phial of liquid butter of antimony (muriate of antimony), and whenever he wounds himself in dissecting, plunges the point of a little wooden pencil into the caustic, and instantly cauterizes the puncture or wound. It is dangerous to wait till the actual cautery can be got ready. We ourselves always recommend the *strong nitric acid*, where the wound is tortuous, or made with a sharp pointed instrument, as this liquid immediately penetrates through every part of the puncture, and completely disorganizes its parietes, and renders them incapable of taking up any part of the septic principle.

When unfortunately the poison has taken effect, we know of no *specific* means of checking its progress, and are obliged to combat the symptoms on general principles, for which no rule can be laid down. It is to be hoped, however, that the prudent precautions of the Parisian schools will be imitated in those of Great Britain; where we know, from painful personal experience, that dissection wounds are too much despised and neglected; or at best but washed clean, and touched with nitrate of silver, which is by no means an effectual cautery.

SELECTED REVIEWS.

An Essay on the Symptoms, Causes, and Treatment, of Inversio Uteri; with a History of the Successful Extirpation of that Organ, during the Chronic Stage of the Disease. By W. NEWNHAM, Esq.

[From the London Medical Repository, for October, 1818.]

THE main object of the present work is to discuss a most momentous question, namely, whether any circumstances can justify the excision of the womb? and the affirmative reply to this question is grounded upon the successful issue of a case which is detailed in the pages before us. A single case, however, remarkable and important as it may be, is not *in se* sufficient to constitute a book; and Mr. Newnham has, therefore, taken occasion to introduce other considerations, both of a physiological and practical nature, into his treatise, which commences with cautions and directions respecting placental delivery, and terminates by remarks on the several theories that have been proposed to explain the still unsolved enigma of conception and generation.

We have already allowed the recorded operation to be creditable to the judgment and ingenuity of the operator; and we are disposed to express ourselves in the same terms of approbation generally as to the record itself. As a literary and medical production, however, Mr. Newnham's treatise is not without its faults. We have no quarrel with authors for the occasional introduction of untranslated quotations; but when a book, professing to be original and English, is nearly half made up of French extract, we cannot help inferring that the wish to inform is too much tinged by the desire to display. Our au-

thor's own composition too is occasionally loose and ungrammatical; and if his tract should arrive at a second edition, a fate which we heartily wish it, Mr. N. will do well to overlook and correct such sentences as the following:—

“The detail of the modern operations of Dupuytren, Surgeon at the Hôtel Dieu, has not yet been fairly *detailed* to the public, notwithstanding the success which has attended several *instances*. Enough, however, is known from the *proceedings* of Dupuytren and Osiander, *to be assured* that a considerable portion of the uterus may be extirpated without great difficulty.”—p. 25.

The medical fault, so to express it, that we find with Mr. N.'s production, is this; that in the detail of his case he has neglected to mark the degree of constitutional re-action by the usual indications, viz. pulse and other functions.

But in spite of faults both of omission and commission, the tract before us is, we do not hesitate to say, worthy a place in the library of every medical practitioner; and we sincerely desire, as well as confidently expect, to hear of its extensive circulation, more especially among the practitioners of the obstetric art.

Our author is first naturally led to consider the causes from which an inversion of the uterus most commonly proceeds; and on this head we shall give his remarks at length, because, however familiar they ought to be with every one who professes the practice of midwifery, we have reason to fear that there is not sufficient attention universally given to the precepts which they teach.

“The most frequent cause of inversion of the uterus, is the imprudent management of the placenta, and rude attempts to hasten its expulsion, by pulling at the chord; but this accident may likewise be occasioned, when the patient is encouraged to make vehement voluntary efforts to bear down, at the moment when the fœtus is about to be pushed into the world: it may be produced by the child being suddenly born, while the woman is in an erect posture, and consequently the excessive capacity of the pelvis will be a predisposing cause of the disease; and it may arise from carelessness in the management of

delivery, when the funis is either preternaturally short, or is rendered so by its being coiled round other parts of the body. These causes will all operate more powerfully in proportion as the uterus may be in a torpid or atonic state*.

“ From the recital of these causes, it is evident, that the inversion of the uterus will be most successfully prevented, by acting upon the simple scientific principle of waiting the return of uterine pain, before employing any extractive force for the removal of the placenta; and of attempting its delivery, *when this is immediately necessary*, rather by exciting uterine contraction, than by any misdirected pulling of the chord. The safety of the patient consists only in a state of contraction of the uterus, and this, therefore, is the object most earnestly to be sought after by the practitioner. The other causes of this accident will be obviated by moderating the efforts of the woman, during the last stage of labour, and waiting quietly for pain, after the head is born, instead of effecting the delivery of the trunk by manual assistance; by confining the patient, in every instance, and especially when the pelvis is more capacious than ordinary, to an horizontal position, from the moment that the head begins to press upon the perinæum; by insisting that she should not be moved off the bed, during that too frequently unfortunate process of “*putting her to rights*,” as it is falsely termed; and by attending carefully to the state of the umbilical chord, enlarging its coil, where this is possible, so as to pass it over the fœtal head, or to allow the body to slip through it, or tying and dividing it when this is impracticable. The extreme shortness of the chord should always be guarded against, by taking care, in every instance, to keep the belly of the fœtus close to the external parts of the mother. And if these simple precautions be but kept in view, and diligently acted upon, an atonic state of the uterus would scarcely ever be met with. Uterine atony arises from previous excite-

* The too great projection of the sacro-vertebral angle has been mentioned as a cause of *inversio uteri*, in an ingenious modern work, which really forms a great curiosity in the history of obstetrical literature. Vide “*Mémorial sur L’Art des Accouchemens, par Madame Veuve Boivin, Maitresse Sage-Femme, &c.*” à Paris, 1817.

ment and overaction; moderate that action, and the power of the organ will be preserved, and its state of inertia almost unknown.

“But if, notwithstanding an attention to these precautions, inversion of the uterus shall have taken place, it is desirable to effect its restoration at once, and consequently it is highly important to become early acquainted with the existence of the disease; and as this can always be ascertained satisfactorily by the most simple means, it is extraordinary that a precautionary measure of this kind should ever be forgotten. *It has often happened, that the death of the patient has taken place from hæmorrhage, and the cause has never been discovered, till, on examination, postmortem, the uterus was found inverted in the vagina. In every instance, therefore, after the delivery of the placenta, one or more fingers of the operator should be introduced into the vagina, in order to ascertain that the uterus is not inverted.* If this simple process were attended to, chronic inversion of the uterus would be known only by description.”

When by misconduct or mishap this accident of *inversio uteri* have taken place, the best mode of operating its reduction is the next question to be determined on; if the placenta still adhere to the protruded mass, some authors have recommended its removal prior to any attempt at reduction, upon the ground that such removal would, by diminishing the bulk of the inverted fundus, facilitate the return of the womb to its natural position. Our author, however, justly condemns this advice, and urges the necessity of the reduction of the placenta, together with the uterus; properly remarking, that “thus returning the placenta while it remains attached to the womb, and its subsequent judicious treatment as a simple retained placenta, will have a good effect in bringing on that regular and natural uterine contraction which is the hope of the practitioner, and the safety of the patient.” Mr. Newnham is right too, in counselling the operator not to have recourse to any mechanical or intermediate contrivances, but to trust to the cautious introduction of the hand, well smeared with some fatty substance, and its *gentle* and judicious employment. If the accident be, as it ought to be, ascertained immediately, no

time must be lost in attempting the reduction in question; but if from its having existed some time prior to discovery, or from other causes, there appear to be a tense and inflammatory state of the protruded parts, so as to render their return difficult, it will be adviseable, first, "to reduce the inflammatory action by bleeding, according to the circumstances of the patient, by warm fomentations to the abdomen, by the local warm bath, or by soothing injections; by keeping the bowels gently open, and by an appropriate diet of barley water, water gruel, &c. And when this first indication has been accomplished, then attempt to re-invert the uterus."

But if both this first, and if we may so say, second opportunity of effecting the reduction be permitted to pass by, the case becomes established as one of chronic inversion of the uterus; and then all treatment, excepting that of excision, will be merely palliative. In this state of things, it will be of course expedient to remove and obviate as much as possible every source of irritation; to keep the bowels and the urinary bladder constantly evacuated; to pay great attention to the preservation of cleanliness in the parts; to use gently astringent lotions; and to employ pessaries according to circumstances. But none of these remedies can lay claim to any radical or specific effect; and now, therefore, the great question presents itself, Is the practitioner justified in hazarding the operation of removing the inverted womb? The recent accounts from France, of sections of portions of the womb, as well as operations of a more remote period, together with successful instances of the Cæsarian section, and cases of recovery from rupture of the uterus, are cited by our author, for the purpose of proving, that this organ may be subjected to considerable violence and irritation without producing fatal symptoms: and having so far established this assumption by the aid of accredited testimony, he proceeds to its more complete confirmation, by detailing the history of a case in which the uterus was extirpated by himself with complete success. The case, as the title of the book states, was one of the *inversio uteri*: it followed upon a natural labour, in which the funis was remarkably short, and the placenta adherent; much hæmorrhage succeeded to its removal; a retention

of urine supervened; *but no examination, per vaginam, was made for several days*, and it was regarded by the practitioner in attendance as a tumour which had been growing for some time, until Dr. Davis was requested to see the patient, who immediately ascertained both its nature and its source. Under these circumstances she went into the country, and became a patient of Mr. Newnham; and he, “fully assured that existence could not be protracted another month, if something were not effectually tried for relief, and well acquainted with the fact, that portions of uteri, if not the entire uterus, had been removed successfully, resolved upon the operation. On the 13th of April, Mr. N. applied a ligature of very strong silk, as high as possible upon the neck of the tumour, taking care to avoid including any part of the os uteri, by carrying the silk considerably within its orifice.” On the next day the ligature was tightened, and again on the 15th; but Mr. Oke, who acted in conjunction with Mr. Newnham, having visited the patient about five o’clock in the afternoon of this day, and finding her in much pain, slackened the ligature; and it was suffered to remain thus slackened till the 18th, when the surgeons, “confirmed in their opinion of the practicability of removing the tumour, and of the nature of the disturbance, as arising rather from *spasm and uterine irritation than from visceral inflammation*, agreed to tighten the ligature,” which was borne exceedingly well; and thus did they daily continue to tighten the ligature, and to give opiates and cathartics, according to circumstances, until the 6th day of May, on which day the statement appears as follows:—6th. No pain since the last report. Our patient’s health is a little improving. When the ligature was tightened this evening the tumour became detached, and I found, to my no small satisfaction, that it was as I had believed, an inverted uterus*.

This woman is now living and doing well, and in a letter from Dr. Davis, which Mr. N. inserts in his tract, and which

* It may seem extraordinary that there could have been any doubts on this head after the examination and decision of Dr. Davis; but of that decision Mr. N. was not apprized till after the operation had been performed.—

bears the date of March 10, 1818, we meet with the following expressions respecting her present condition. "She is a living evidence of the general fact of what has been done for her. I was most keenly disappointed, when she refused me permission to examine her the other day. I saw one of her mammæ in a state of fine health and plumpness; and she assured me, (and I have not the smallest doubt of the fact, from the earnestness of her manner, and the apparent sincerity of her character,) that the privileges of matrimony are as gratifying to her at the present moment, as during any period of her married life. I presume that she may still be in possession of ovaria."

Mr. Newnham, aware that a single case, however successful, is not sufficient to establish a rule, proceeds, in the subsequent sections of his work, more particularly to point out authorities for extirpating the womb, to detail the consequences which, sooner or later, must almost inevitably result from permitting the inversion to remain without any radical remedy, and to urge that the extirpation of polypi, which all agree to be desirable, is as likely to be followed by unfavourable results as the excision of the uterus itself. But, in the first place, he makes a few observations on the uncertain marks of distinction between an actual inversion of the organ and polypous excrescences from its internal surface. It is well known to those who are at all conversant with these subjects, that the form of the tumour, polypus being broad at its base, and attached by a narrow pedicle, the degree of sensibility which it displays, polypus being, comparatively with the uterus, without sensation, and the smooth and polished surface of the former, compared with the rough and irregular circumference of the latter, are the main points of diagnosis, as stated by authors: that these, however, and all others are, occasionally, fallacious, is sufficiently evident, from the fact, that the most discerning and experienced are sometimes at a loss to determine upon the actual nature of the protruded substance; and the previous history and circumstances of the patient are, after all, for the most part, the surest guides to discrimination between the one and the other disease. In order to prove this

uncertainty, we have, as before hinted, a vast mass of evidence, both from British and Foreign professors, to mention even the names and opinions of whom would be quite inconsistent with our limits.

“On the whole, therefore, (concludes Mr. N.) we infer the difficulty and uncertainty of the diagnosis; and we proceed to consider the consequences of *inversio uteri*.”

These are, briefly, when the disorder has become chronic, that “the female, for the most part, either drags on a miserable existence for a number of years, or her life is cut short by the constant drain.” The immediate consequences are likely to be a sudden dissolution, from the attendant hæmorrhage. It is now, then, that we are naturally made acquainted with the authorities in favour of the operation: which, however, at the best, are rather of an equivocal cast, and in one of the most accredited of the continental publications we meet with the following sceptical inference in relation to the particular under discussion. “These alleged cases of extirpation of inverted wombs were doubtless, in the majority of cases, mere excisions of polypi*.”

“But, (says our author,) in opposition to these doubtful conclusions, *the removal of so large a portion of the uterus as the preparation exhibits, in a young woman, during the menstruating part of her life, and while the uterine vessels were constantly pouring out a very large secretion; scarcely three months from the time of her delivery; and in a subject the most irritable and unfavourable for such an operation, must attach a greater degree of credibility to some of the previous histories of similar success; must dissipate every doubt as to the practicability of such an operation; and must prove at least that in such an otherwise hopeless state, the surgeon is justified in attempting to afford permanent relief.*”

The subsequent section of Mr. Newnham's book, as before

* We have been favoured by Mr. Chevalier with the sight of a preparation which consists both of the uterus and the vagina, and which parts were extirpated by him, and the patient did well. We believe that the particulars of this case are recorded in one of the numbers of the *Philosophical Transactions*.—REV.

stated, consists in an endeavour to show that the extirpation of mere polypus is as likely to be attended with unpleasant consequences, as uterine extirpation, under favourable circumstances; and he finally aims at proving, that there can be no fear of extra uterine conception in cases where the uterus has been taken out, and the ovaria left entire; since the sympathetic theory of conception, advocated by Dr. Haighton, and which, if correct, might lead to such apprehension, although ingenious, is not true. This last portion of Mr. N.'s treatise is throughout well written, and the opposition to Dr. Haighton's assumptions, ably maintained.

So much for the book before us. It will be recollected by some of our readers, that, having announced our intention of analyzing this tract, some months since, we stated afterwards our reasons for delaying to fulfil such engagement. The fact is, that we were desirous to await the issue of another case, the termination of which, both from its nature, and the high character of the professional gentlemen concerned in it, would, we felt aware, either prove greatly in favour, or argue substantially against the several inferences of Mr. Newnham. That we did not do amiss in thus deferring the review, every reader will allow, after a perusal of the subjoined document; the publication of which will prove rather an advertisement than an anticipation of the more detailed account, which the writer has engaged to give in another work.

“In reply to your note of Friday, I have the pleasure of informing you that our patient is doing well. I have promised to draw up the case, accompanied by a few practical remarks, for the next publication of the Medico-Chirurgical Society. In the meantime, I can have no objection to your referring to it in any way that may serve to illustrate your review of Mr. Newnham's Tract.

“Mrs. Senior, of No. 16, Crescent, Somers' Town, was taken in labour of her third child, on the 7th of May, and was attended by a general practitioner, of many years' standing in his profession. The child presented naturally, and was expelled by the uterine efforts. The umbilical chord, however, was coiled round its neck twice; and, from being thus shortened, it

was put upon the stretch during the expulsion of the body, which became a cause of profuse hæmorrhage immediately after delivery. Upon examination for the placenta, it was found in the vagina, and removed without violence; but with very little abatement of the flooding. The inversion of the uterus, the real cause of the excessive discharge, was not, however, discovered till the third day after delivery, when the nature of the accident was recognized by my friend, Dr. Sims, who was then (10th of May,) consulted on the occasion. On the evening on the same day, at his suggestion, I was requested to meet him in consultation. The patient appeared at that time in a state of extreme exhaustion; her life was not worth twenty hours' purchase. In such a state, and so recently after delivery, she was obviously not a proper subject for an operation of any kind. We therefore agreed to recommend such a plan of treatment, and such a regimen, as appeared calculated to improve strength, and to replenish the system; and in case of her surviving the immediate effects of the accident, which was then extremely doubtful, we proposed, at some future and more seasonable opportunity, so far to entertain the question of extirpation, as to give it our best consideration. After this time, our patient suffered no considerable loss of blood, and she gradually recovered some little strength.

"In about seven weeks after the delivery, we met in consultation again. She then complained of a violent pain of the right inferior extremity, from the hip down to the foot. This pain was more or less constant and acute: it was, indeed, so distressing to her, that she seldom slept more than an hour (sometimes an hour and a half,) in the four and twenty. It was manifestly a cause of great irritation to her; and as it was not unreasonable to conjecture that it might depend upon the uterine displacement, we felt some hesitation in proposing, even now, any measure which might have the effect of greatly increasing it. We therefore proposed to wait a few weeks longer, in hopes that this extraordinary pain, which, however, was without tumour or redness, would wear itself out; promising that we would meet again in the course of a month to consider of something further for her relief. But before three

weeks were expired, we were requested to see our patient again, and urgently solicited to think of, or do any thing that might have even a chance of diminishing her sufferings.

“After guarding the event by a very cautious prognosis, and transferring a part of the responsibility to the parties more immediately interested, we came to the conclusion of attempting the removal of the inverted uterus by ligature. Being prepared with the necessary apparatus for this purpose, I applied it during this visit, in the presence of Dr. Sims, and Mr.—, the ordinary medical attendant of the family. This was on the 22d of July. During a great part of the process of extirpation, the pressure of the ligature occasioned extreme pain, and was accompanied by much constitutional irritation. The weather at the time was very hot, and bowel complaints, from that cause, universally prevalent, and our patient suffered exceedingly from an urgent diarrhœa. She was disturbed in this way every hour, and sometimes more frequently, for several days together. Having simply referred to this coincidence of the season, I confess that I am myself more disposed to attribute the great disturbance in the functions of the intestines in this case, to the action of the ligature, than to the high temperature of the atmosphere. However that may be, the effect was truly alarming, as our patient was brought by it into a state of imminent danger. During the earlier part of the process, no formidable symptom occurred; during the latter eight or nine days, the constitutional reaction was very great indeed; pulse ranging for several days between 140—156.

“On the 8th of August I found the ligature disengaged, and the tumour loose: pulse 108.

“During the action of the ligature, the pain of the foot, as the patient expressed herself, was numbed. This provoking pain has, however, harassed her a good deal since the extirpation of the womb. It is, however, gradually subsiding, and the patient is daily gaining strength. Upon the whole, I am of opinion, that the removal of the human womb is a very serious operation; not to be attempted in any circumstances; and, in fact, not to be considered as safe, excepting in most judicious and cautious hands. The particular facts of the case of Mrs.

Senior, when given in detail, will develop some difficulties and dangers to be apprehended, (and of course, if possible, to be avoided,) which have not appeared to come in the way of Mr. Newnham.

"If, then, I were asked, whether the human uterus, in a state of inversion, could be removed without risk, in any favourable circumstances? I should find it difficult to give a confident answer. On the other hand, I should not feel much hesitation, or fear to engage in the operation again in favourable circumstances. Moreover, I think that, in a case of increasing exhaustion from periodical losses of blood, or from a high degree of irritation, on account of the uterine displacement, the result of these two cases will leave no choice of duty on the part of the practitioner. This duty, however, would not devolve upon any practitioner; but exclusively on the competent; as the recovery of the patient would mainly depend on the constitutional treatment, and on the daily conduct of the local process, with a constant reference to the constitutional symptoms.

"I am,

"Your's faithfully,

29, George Street, Hanover Square,
Sept. 13, 1818.

"D. D. DAVIS."

Topographie de tous les Vignobles connus, &c.; i. e. A Topographical View of all the known Vine-districts; explaining their Geographical Position, the Kind and Qualities of the Products of each, the principal Wine-trading Stations, the Names and Capacities of the Casks and Measures in use, the ordinary Modes of conveying them, &c. &c. accompanied by a general Classification of Wines. By A. JULLIEN, Author of the Butler's Manual, and Inventor of the *Æriferous* Tubes, and other Instruments for decanting and filtrating Liquors. 8vo. pp. 590. Paris. 1816.

[From the Appendix to the Monthly Review, Vol. LXXXIII.]

LEST this high-sounding title should excite a suspicion of quackery, we must apprize our readers, *in limine*, that the work

before us conveys a considerable portion of practical knowledge respecting the growth and commerce of wines, in correct and perspicuous language. As, moreover, in situations in which the temperature of the climate is inadequate to ripen the juice of the grape, or neglect or prejudice has prevented its culture, the inhabitants have usually had recourse to the more homely substitutes of cider, ale, palm-wine, &c., these accessories have also attracted M. JULLIEN'S notice: so that his book may thus be said to present us with a descriptive catalogue of those fermented liquors which, under all diversities of latitude, and the restraints of law or religion, continue to exhilarate our social hours. It must, perhaps, be granted that they contribute, at the same time, to deteriorate the physical and moral condition of our species: yet still the vine has so *interwoven its branches* with our civil institutions, and *struck its roots* so deeply into our systems of agriculture and commerce, that he would be deemed a most rigid reformer who, if he could, would cancel its existence. At all events, its fruit is not only innoxious but grateful to the palate, and highly nutritious; and, if it furnishes a beverage that is too often perverted to unworthy purposes, we should not forget that the same cordial has revived the frame when sinking under languor and disease; that it is a less baneful, and more elegant, article of luxury than ardent spirits; and that, with the progress of civilization and refinement, its immoderate use becomes restrained by the sway of public opinion, and the influence of public manners.

The plan which M. JULLIEN proposes, and which, as far at least as France is concerned, he steadily pursues, is to define the geographical boundaries of the various tracts which he has had occasion to survey; to note the kinds and qualities of the wines for which they are distinguished; to assign to them their respective degrees of merit; to register the average annual quantity produced in each district; and to state the names and capacities of the vessels in which they are kept, the measures by which they are sold, and the depots from which they are distributed by means of water or land-conveyance. It may, perhaps, be fairly alleged, that the geographical indications are often unnecessarily minute; and, though the numerical returns of yearly

crops, produced within particular boundaries, *may* approximate to the truth, and certainly are set down with apparent confidence, we are seldom informed of the authority on which they rest. We must also say that the writer's divisions of wines appear to us both unphilosophical and incommodious; *genera* being deduced from *consistency* and *colour*; although he is perfectly aware "that wines which differ in colour may, nevertheless, be of the same genus in respect of consistency; and that *dry*, *sweet*, or *mellow* wines indifferently assume all tints." Thus the two sources or principles of his generic distinctions are completely blended. Instances are also recorded, in the sequel, of the colour changing with age, while the virtue of the liquor remains unimpaired, or is even improved. His three principal species, again, are the *fine*, the *ordinary*, and the *common*: epithets which are equally unsusceptible of any very definite or permanent meaning; and the author himself is too conversant with his subject not to be sensible that the intermediate shades are numerous beyond description, the varieties of the vine itself probably exceeding two thousand, while other countless circumstances more or less affect every process of fermentation. For the purposes of popular instruction, therefore, it might be adviseable to reduce his awkward nomenclature to three great *classes*, the *dry*, the *sweet*, and the *intermediate*. We must add, however, in justice, that M. JULLIEN has explained the import of his different titles with so much clearness, as to obviate much ambiguity which might have otherwise ensued in the perusal of his work.

In his interesting exposition of the vineyards of France, the author might have spared his readers the formal delineations of those departments which either produce no wine, or yield that which is of a very inferior quality. Presuming that our readers, at least, would scarcely thank us for the sour grapes of Picardy, we shall introduce them, without farther preface, into Champagne and Burgundy.

The sparkling white wines, which are so generally and so highly prized, are chiefly procured from the neighbourhood of Rheims and Epernay; viz. at Sillery, Ay, Mareuil, Hautvillers, Pierry, and Disy. These are usually obtained from a mixture of the black and the white grape; the former chiefly con-

sisting of varieties provincially denominated *morillons* and *pin-eaux*, and the latter of the *plantes dorées* and the *épinettes*. The most esteemed red Champagnes are those of Versy, Versenay, Mailly, Saint-Basle, and Bouzy; which are denominated *de la Montagne*, and the *Clos de Saint-Thierry*.

“ The grapes destined to the manufacture of the rose-coloured wine are gathered with the same precaution as those which are employed in preparing the white wine, and they receive the same treatment under the press: but they are previously plucked from the stalks, and lightly trodden in vessels appropriated to the purpose; in which they remain until the incipient fermentation, by dissolving a portion of the colouring resin, imparts to the must the pink tint that is wanted.

“ In making this rosy wine, they have sometimes recourse to a liquor known in the country by the appellation of *Fismes-wine*.^{*} It is extracted from the berries of the elder, which are boiled with cream of tartar, and then passed through a filter. A few drops of this liquor will communicate the rose-tint to a bottle of white wine, without altering its flavour or wholesomeness; yet, as this composition is extraneous to the wine, it would be desirable to dispense with it.

“ The high price of the sparkling Champagne wines is owing, not merely to the quality of the wines selected, and the excessive attention which they require before they are in a marketable state, but also to the considerable losses and advances to which the proprietors and merchants, who speculate on the commodity, are liable; as well as to the capricious phenomena which determine or destroy the sparkling property. With regard to loss, the owners generally reckon on the breaking of fifteen or twenty bottles in the hundred, and the number sometimes amounts to thirty or forty. To this original loss of liquor and bottles, should be added the waste incurred at each separation of the wine from its precipitates, by *disgorging*[†]; an operation which they undergo at least twice before they are consigned to conveyance.

“ As to those phenomena which determine or destroy the

^{*} Prepared in the town of that name, at six leagues from Rheims.”

[†] This is a process by which the lees of the bottle are removed and the wine left perfectly clear.”

sparkling quality of this wine, they are quite surprising and inexplicable: for the same wine, bottled on the same day, in bottles from the same glass-house, deposited in the same cellar, and placed on the same heap, sparkles at a given height in a particular direction, while it exhibits the same property in a much fainter degree, or is even quite dead, in another position, as near a door or under an air-hole. Some wines, again, which at first sparkle with the utmost vivacity, are observed to lose this property entirely on a change of seasons. The dearth of frothy wines, therefore, results from the combination of all these accidents; which are so various and so extraordinary, that the most practised dealers cannot always either foresee or guard against them.

“ The quality of the ingredients employed in the manufacture of the bottles, and perhaps also the degree of heat to which they have been subjected, contribute to diminish or preserve the vivacity of the Champagne wines. We have been assured, that even the glasses used in drinking them may produce similar effects; and that, in some, all effervescence is arrested as soon as the wine is poured into them, while in others, filled at the same time, it is kept alive.* Hence we need not be surprised to find, in the same basket, bottles of which the contents sparkle with more or less briskness, and others which give no indication of such a property.

“ Frothy wines should be bottled in the month of March that succeeds the vintage. The fermentation usually commences in the month of May, and continues throughout the summer; and it is particularly strong in June, during the flowering of the vine, and in August, when the grape begins to ripen. These are the periods at which the proprietors suffer most from the breaking of the bottles; when it is imprudent to walk through a well-stocked cellar without being protected by a wire-mask, by neglecting which precaution work-people have been severely wounded by splinters of bottles. The fermentation abates in Autumn, and serious accidents rarely occur in the second year.”

“ * It is probable that the glasses, which produce this effect, are those in which there is either an excess or an improper combination of alkaline parts; which, in that case, absorb the carbonic acid that is contained in the wine.”

It has been observed, that the frothy quality of these wines is most generally manifested in seasons which have proved unfavourable to the complete maturation of the grape; the quantity of carbonic acid gas contained in the liquor being, apparently, in the inverse ratio of its spirit, or body; but, if the grapes happen to be slightly affected by frost, when almost at the ripening point, the wine obtained will unite in an eminent degree the qualities of strength and liveliness. In this last case, the cold, by closing the pores of the fruit, is supposed to intercept its insensible transpiration, and to concentrate its fermentable principles.

“ The principal traffic in the wines of Champagne is carried on at Rheims, Avize, and Epernay. The last-mentioned town is advantageously situated in the centre of the best vineyards, and in a soil favourable to the establishment of good cellars; which, excavated in a rock of tufa, are spacious, excellently adapted to the preservation and improvement of wines, and as solid as if they were supported by arches of stone. Those of M. *Moët* are especially remarkable on account of their extent, and form a sort of labyrinth from which it would be difficult to escape without a guide. The walls are lined to the height of six feet with bottles tastefully arranged; which, depositaries of the precious juice of the best vineyards of Champagne, await in this abode orders for their departure to distant countries. Few travellers pass this way without going to see these cellars; and even sovereigns have had the curiosity to visit them.”

M. JULLIEN includes Burgundy and Beaujolais in the same chapter, notwithstanding their geographical difference, because the wines of both have common qualities, and are sold, not only by the same measurement, but often under the same name. On a like principle, he has been induced to detach the *arrondissement* of Châlons-sur-Saône, and to consider it in conjunction with the department of the Côte-d’Or; so that the districts particularized in his eleventh chapter are, the department of the Yonne, that of the Côte-d’Or, including the *arrondissement* of Châlons-sur Saône, the remainder of the departments of the Saône and Loire, and the *arrondissement* of Villefranche, in the department of the Rhone.

“ The extent of territory allotted to the culture of the vine,

since the Revolution, is remarkably increased; many of the proprietors having converted low and marshy grounds into vineyards; others having applied manure to the sloping surfaces, or invested them with new soil, in order to obtain more abundant crops; while others, again, have substituted young stocks for those which had grown old, and even those of an ordinary for those of a superior quality. Persons who purchase the produce of these degenerated vineyards, or who are furnished with the wines of a bad year for those of a good, suppose that the wines of Burgundy are no longer what they formerly were: but this opinion is founded on certain abuses, which are equally practised in all other wine-countries: and we shall see, in the course of this chapter, that, if Burgundy produces a much greater quantity of common wines than it did thirty years ago, the number of its good crops, so far from having diminished, has been augmented by the addition of many hills, of which the products equal, if they do not surpass, both in quality and quantity, those which rapacity has been enabled to destroy or defame."

The Burgundy wines have been commonly ranged under three distinct denominations; namely, those of *Lower Burgundy*, of *Upper Burgundy*, and of *Macon*. The first are grown in the department of the Yonne, which is formed of Lower Burgundy and a portion of Champagne; the second are peculiar to the Côte-d'Or, comprizing the *arrondissemens* of Châlons-sur-Saône, Dijon, Beaume, Chatillon-sur-Seine, and Semur; and the third are the products of the department of Saône and Loire, formed of a part of Upper Burgundy, and divided into the *arrondissemens* of Macon, Autun, Charolles, Louhans, and Villefranche. These three sorts of wine have also their appropriate qualities. Those of Lower Burgundy have, in general, less alcohol, aromatic flavour, and odour, than those of the upper parts of the province: but they are more lively, and retain, for a considerable length of time, that faint degree of harshness which characterizes claret. Those of the upper districts accord with the French ideas of perfect wine, possessing all the requisite qualities blended in the requisite proportions. The Macon varieties, again, have an inferior perfume, a

coarser unctuousness, and a considerable degree of consistency, without being clammy.

In some parts of Lower Burgundy, particularly in the Auxerrois, the vine appears to have been cultivated when the Romans invaded Gaul. Some of the existing plants, which are mostly of the varieties called *black* and *white Pineau*, *Tresseau*, *Ronçain*, and *Gammé*, are ascertained to be upwards of a hundred years of age. The last, however, though it yields an abundant crop of fruit, deteriorates the quality of the wine: and the author says that “it would be desirable to renew the edict of Charles IX., which prohibited the planting of the infamous *Gammé* in vineyards of the first order.”—Among the celebrated red wines of this district are those of Danemoiné, Tonnerre, and Auxerre; and, among the white, those of Tonnerre and Chablis, the latter including Le Clos, Valmur, Vaudesir, &c.

The red grape produced in the department of the Côte-d’Or, for the purpose of obtaining the first-rate wines, are the *Noirien* and *Pineau*; and the white, also of the first quality, are the *Chaudenay*, *Melon blanc*, and *Chasselas*. The best red wines which the district yields are the *Romanée Conti*, *Chambertin*, *Richebourg*, *Clos Vougeot*, *Romanée de Saint-Vivant*, *Tâche*, and *Saint-George*; and the white, of the first quality, are those of *Puligny* and *Mont-Rachet*.—The best red grapes cultivated in the department of the Saône and Loire are the *Bourguignon* and *Chanay*; and the best white are the *Chardonnat* and *Bourguignon*. To the first class of red wines, furnished by this department, belong those of the *Windmill*, *Torins*, and *Chenas*; and, to the first of the white, those of *Pouilly* and *Fuissey*.

M. JULLIEN has detailed, with much specialty of local nomenclature, the great diversities of Burgundy wine of the inferior classes; and we have only to express our regret that he has not bestowed equal attention on the modes of preparing those which are most in request.—In his systematic exposition of the wines of Franche Comté, he makes the following observations on those of Arbois.

“These wines would be much more highly prized, and would more frequently grace the banquets of our capital, if they were more carefully managed; and if the proprietors, following the

example of the Champenois, would deliver them freed from all particles capable of affecting their transparency. With this view they should be fined, drawn off, not bottled till perfectly limpid, and allowed to repose a sufficient length of time, in order to insure them against muddiness; or, if any deposition should take place, it should be removed by disgorging*; an operation which the Champagne wines often undergo several times before they are delivered, and which renders them perfectly clear, and preserves them so for many years; whereas the Arbois wines are rarely clear, and soon form large depositions which alter their transparency and flavour. The owners and dealers in this tract of country do not sufficiently estimate the strength and frothy qualities of their wines; some of them frothing too much, and breaking the bottles, while others are not sufficiently sprightly, or are even destitute of the sparkling property, and must be kept a long time before they acquire the good qualities of still wines. These defects proceed, perhaps, from the nature of the wine. Though I am ignorant whether the necessary experiments have been made to ascertain this particular, I know that the Champenois have many difficulties to overcome, and that, in some years, they still suffer enormous losses by the breaking of the bottles: but their care and persevering activity maintain the reputation of their wines, which are the best of the sparkling kind known, as their white varieties hold the first rank among those of the still sorts.

Though the wines of Charente are of very inferior reputation for the table, they yield the most esteemed brandy in Europe: the grape from which they are obtained, called the *Folle blanche*, being far from grateful to the palate, and producing a white wine that is destitute of pleasant flavour, but is very spirituous. The brandy distilled from the red wines is of inferior quality. In good years, the white wine yields a fifth of its bulk in brandy: but, in bad seasons, nine, ten, or even eleven parts of wine, are required for one of brandy. The proprietors distil on their own premises; and the brandies of the whole department pass, in trade, under the denomination of *Cognac*.

* * For the manner of disgorging the sparkling wines of Champagne, see the Butler's Manual."

In the Lyonnais, we meet with the red wines of *Côte Rotie* and the sweet white wine of *Condrieux*, both unrivalled in their kinds. The former, which are produced on two shelving banks, have a strong body, combined with an exquisite vinous flavour, and a most agreeable perfume. They should be kept in the cask six or seven years, to acquire a sufficient degree of ripeness, and then bottled, when they are still susceptible of improvement for a number of years. The *Condrieux* sweet wine has no muscadine flavour, but a very balmy relish and odour. It may be kept for a long time, and assumes an amber tint in old age. Wine of a similar though inferior description is grown in the adjacent vineyards, and sold under the name of *Condrieux*: but we are not here informed from what sort of grape either the *Côte Rotie* or the *Condrieux* is produced.

The department of the Drome is noted for its red and white *Hermitage*, so called from a small district in the territory of *Tain*, in Dauphiny. The red is characterized by a strong body, a delicate vinous flavour, and a most pleasing perfume, partaking of that of the raspberry. In order to have it in perfection, it should be kept in the cask eight or ten years, according to the degree of the maturity of the grape employed; and, like the preceding, it still improves considerably in the bottle. The white is also a liquor of the first quality; very soft and unctuous, full of spirit, and of a fine essential odour. It may be kept for a long time, and becomes of an amber hue as it grows older. These delicate wines, however, are so scantily noticed by M. JULLIEN, that we entertain some doubts of his being particularly acquainted with their history.

Of the *Vins de Bourdeaux*, or various kinds of *Claret*, the extent and notoriety supply him with a far more copious theme, through the details of which we cannot presume to follow him. The red kinds, which figure in the first class, are those of *Lafitte*, *Latour*, *Chateau-Margaux*, and *Haut-Brion*; and the white in most request are those of *Graves*, *Dulamon*, *Pontac*, *Sauterne*, *Barsac*, *Preignac*, and *Beaumes*. The *travail à l'Anglaise*, or the process of rendering the pure native claret more vigorous for certain English palates, is particularly described: but the liquor which has undergone this manipulation is openly

sold as *worked wine*, and at an advanced price, on account of the waste incurred and the additional pains bestowed.

Languedoc is particularly fertile in excellent wines, but few of them, comparatively, are exported. The white and muscadine sorts of *Lunel* and *Frontignan* have, however, obtained merited celebrity.

“ Next to the muscadine wines of *Rivesaltes*, those of *Frontignan* are reputed the best in the kingdom; being distinguished by their sweetness, strength of body, a marked taste of the fruit, and a most exquisite perfume. They improve with age, may be preserved for a very long period, and sustain land or water-carriage without injury. The vine-tract which produces them extends over a vast plain, gently inclined to the south-east. *Lunel*, the chief place of the district, at five leagues north-east of Montpellier, also produces excellent muscadine wines, the best of which are equally prized with those of *Frontignan*: they are more precocious, and somewhat more light and delicate, but have less body, a relish less distinctly defined, and sooner lose their soundness. This description of wine forms but a small portion of the produce of the *Lunel* vineyards, which yield an ample store of common red wines, that are almost wholly allotted to distillation.”

The vineyards of Provence supply more varieties of the grape than any region of France: but this very circumstance seems to deprive its wines of any very decided or appropriate flavour, so that they are not generally much in request. The department of *Vaucluse*, however, furnishes the red wines of *Coteau Brûlé*, *Chateauneuf*, and *Sorgues*, and the muscadine wines of *Beaumes*, all of which rank in the first class; while the inspissated sorts of *Aubagnes*, *Cassis*, and *Ciotat*, especially when of mature age, are deemed by competent judges superior to the sweet wines of Spain, Italy, and Greece, and are by some considered as not inferior to *Tokay*.

Jurançon and *Gan*, both in the neighbourhood of *Pau*, in *Bearn*, furnish red and white wines that are greatly preferred to most which are produced in the same quarter of the country; the white *Jurançon*, in particular, being characterized by a delicate truffle-flavour: but they are surpassed by the white sweet muscadine of *Rivesaltes*, which is regarded by con-

noisseurs as one of the best liqueur-wines in Europe, and, when ten or twelve years old, may vie with the finest Malmsey.

In this very compendious report of the first part of the work before us, we have purposely refrained from touching on the numerous French wines of subordinate quality, with which the author has chosen to swell his descriptive catalogue; though it was already sufficiently protracted by his plan of recapitulating the names of places. If his commemoration of the inferior wines, however, be redundant, the information with which he furnishes us concerning some of the better kinds is occasionally deficient: at least, we should have attached more importance to his pages, if he had more frequently particularized the qualities of the soil, the management of the plants, the modes of conducting the several vintages, the average sale-prices of the different wines, &c. In some few instances, he ventures to hazard an observation on the chemical constitution of certain wines; though his general reserve on this interesting department of his subject would induce us to believe that he is a stranger to some excellent communications by *Ghaptal*, and others, on the scientific principles of vinification: as well as to an ingenious paper, by Mr. Brande, inserted in the *Philosophical Transactions of the Royal Society of London* for 1811. The article *Vigne*, by *Dussieux*, in *Rozier's* "Course of Agriculture," might also have been consulted with great advantage.

Practical Illustrations of the Scarlet Fever, Measles, Pulmonary Consumption, and Chronic Diseases; with Remarks on Sulphureous Waters, &c. By JOHN ARMSTRONG, M. D. London, 1818, pp. 448.

[From the London Medical Repository, for May 1818.]

WERE it possible for the merits of a writer to be reflected upon the pages of his reviewer, so that both author and critic should become in some sort identified, it would be the height of policy to commence, as we do, our analytical labours, by a

notice of the work before us. To say that Dr. Armstrong is an interesting writer, would be to make use of an epithet far from sufficiently expressive of the feelings with which we have just closed an attentive perusal of his present Treatise;—a Treatise which, we predict, will continue to be read and praised as long as a love shall last for the combination of scientific lore with classical taste. In saying thus much, let it not be supposed that we mean to convey any thing of an adulatory nature, or to commit ourselves to unqualified approbation: not as partial friends, but as faithful critics, have we examined Dr. Armstrong's volume; and before we proceed to the more particular survey of its contents, we shall offer one or two further remarks on what appear to us to be its faults and failings, as well as its worth and beauties.

In the first place, then, we would say, that the style of Dr. Armstrong, like that of Currie and Reid, is not seldom *too good*. We do not mean to institute any thing like a comparison between these authors, further than by just hinting, that the clothing which they all give to their thoughts, is occasionally so dazzling and so graceful, that we imagine we are contemplating beauty of a far superior order, while, in fact, our regards are fixed upon what is in reality of a very ordinary stamp and character; although, for example, every reader of taste must dwell with delight upon those pages of the author immediately before us, in which the preventives of pulmonary consumption are descanted on with a mastery of eloquence; we doubt whether the quantum of matter which they actually contain amounts to much more, than what in most hands would show itself to be mere naked common-place. Secondly, we would suggest, whether the excellent author now under notice, be not occasionally too wordy and diffuse. This, indeed, may be considered as a continuation of that charge we have just ventured to adduce; but by diffuseness in the present instance, is meant a want of logical concentration, and summing up, as it were, of his thoughts, in an aphoristic and recapitulatory manner. It is especially while perusing such pages, as Dr. Armstrong's, that the reader stands in need of something of this sort, as he is otherwise likely to be unresistingly carried on by the fascinations of his author's style, and thus cheated

into a kind of passive acquiescence with the author's postulata and principles. Now and then we meet further with prettinesses of expression, in which the attempt to produce effect is rather too conspicuous; as when the lancet is called "the right arm of medicine, and calomel the left:" these last drawbacks to perfection in composition are, however, by no means found in abundance; and we shall close these preliminary hints on the manner of the present writer, by extracting two or three of his sentences, taken almost at random, which may serve at once as specimens of the excellency of his style, and as an example of his mode of thinking on medical subjects:—

"On the great evils incident to man, an idea that nothing can effectually alleviate or remove them, is the most to be deprecated; for it wraps us in the cold undisturbed contentedness of apathy, when we should have been straining every nerve, and trying every expedient in the cause of humanity. Though so many ages have passed away, the world is only yet in the infancy of knowledge. Much of the information of ancient times was necessarily lost, for want of some means to diffuse and preserve it entire: but as the press now renders useful inventions and discoveries imperishable, the warmest anticipations of philanthropy and philosophy may be indulged with respect to the future."

A man who thus writes and thus thinks, cannot fail of being listened to and admired. One word further on the principles by which we have been actuated in confining our analytical department, for the present month, to a single author and a single book. Our apology, indeed, for so doing might lie in the especial merits of the work selected; but the truth is, that the analysis of the volume before us actually involves the discussion of three separate affections, all of which are of paramount interest to the medical inquirer; namely, scarlet fever, measles, and pulmonary consumption.

What is fever? Whoever may have given any share of his attention to the principles of medical nomenclature, will at once perceive, that in the naming of disease, the effect, or one of the effects of morbid action, is very often, by a kind of metonymical management, taken for the cause; or rather, that one prominent system of a disordered state is, as it were, seized

on and made use of as an identification of that state. Of this we have a notable instance in the application of the word fever; a word which, from being merely an enunciation, so to say, of one link in a long chain of morbid being, has come to stand in the form of a predicate to particular and distinct maladies. It must soon have been perceived, by observers of morbid phenomena, that the heat of the body is preternaturally increased, in several deviations, from the standard of health: this observation connected itself, in the minds of the observers, with a vague idea of causation, and thus a prominent condition or sign was made expressive of a cause; but, as the body's temperature is often equally augmented, under very many varieties of an obvious nature, in the actual interior state of the body, it became necessary to seek for epithets further expressive of such varieties; and thus the adjectives, nervous, inflammatory, bilious, putrid, and so on, came to be attached to the generic cognomen fever. But it will be obvious, that this term fever, even helped out by its respective adjuncts, is exceedingly vague and unsatisfactory; for the heat of the body may be preternaturally augmented by many causes of an opposite nature, and the induced state be thus widely different as to its actual essence. Suppose, for example, that an individual by violent exercise occasion an unusual heat in his body, we might, with propriety, term the induced state fever: but the term, in this last case, would announce a something very different from that condition which the word is employed for the most part, to characterize; since, although there is heat, there is not oppression; though there is excited, there is not perturbed action. But there are other means by which the body's temperature is raised above its ordinary standard; in which, nevertheless, the peculiar perturbed and oppressed feelings and actions do not display themselves as they do in those variations from health, which are usually allowed to constitute fever. When, for instance, a large organ of the body falls into a state of inflammation, it will not seldom be the case that the temperature of the whole body will, in consequence, be raised to a degree equal to the conditions above supposed; but still there is the absence of that peculiar something,—that oppression of the animal powers,—that "*languor cum arteriarum*

pulsu concitato," which denotes absolute fever. Of these animal powers we know that the brain and nerves are the organs and instruments: when, therefore, such powers are depressed or depraved, it is natural to look to something of change in these parts, as the actual cause of the induced change in the feelings and circumstances of the individual in whom they have taken place. The question then, as to the absolute constituents of the febrile state, would seem to narrow itself into the question of the brain's condition during its presence; and this state, say some modern authors, "with Plouquet and Clutterbuck at their head," is inflammation. But all parts of the brain's substance and coverings shall, at times, be the subjects of all kinds and degrees of inflammation, without the peculiar features of actual fever being necessarily present. Although, then, fever and inflammation of the brain may, and do often exist consentaneously, inflammation of the brain is not fever, neither is fever inflammation of the brain. Fever, in point of fact, is nothing more or less than a disruption of the connected movements of the animal frame, by which the balance of powers is overthrown, the laws of excitability are changed, and in consequence of which the ordinary exciting agents cease to display their exciting energy. This state widely differs from debility, since debility is properly a gradual reduction of a regular kind below the standard of health; it differs as widely from strength, since strength consists not only in vigorous, but in equal and orderly excitement; while the actions of fever are uncommensurate and perturbed. But, then, the pathological enquirer requires further to be informed of the actual condition both of nerve and blood-vessel, and of every constituent of animal organization which is necessary to the production of the state of the excitement just announced. Here properly commences the whole business of pathological investigation and dispute; and the difficulty of giving a satisfactory solution of the problem thus advanced, consists in our ignorance of change of action, as connected with change of function in the sentient organization. Obligated then are we, at least in the present state of anatomical science, to content ourselves with the ultimate fact, that some change has been operated by feбри-facient powers upon the percipient organs;

but what that change is, we know not, nor do we get an iota nearer the truth by the invention of abstract terms, such as spasm. It is the second link in the chain that first becomes palpable; and the grand improvement in the pathological speculations of the present period consists mainly in this, that we confine ourselves to such inquiries as are obvious to our senses. Thus, observation and dissection will show us in what condition are the blood and the blood-vessels* in several febrile disorders, and it is a matter of notoriety that the bodies of individuals, who have died of what is nosologically regarded as one and the same disease, display widely different appearances in regard to the evidence of the blood's distribution. In one case, the veins of the stomach shall be found gorged with blood, marking that here had been the principal accumulation or congestion; in another, the blood-vessels of the brain shall obviously appear to have principally borne the burden and heat of the conflict; now the liver shall, as it were, seem to have sucked in a great portion of the circulating fluid; and now the lungs, the heart, the spleen, the kidneys, or the several membranes lining cavities, shall prove themselves to have been the organs or parts mainly concerned in this abstraction to themselves of so large a quantity of the vital mass. Fever, then, to recur to our original postulate of inquiry, is brought about by such an agency exercised upon the propelling power of the circulatory movements, as that these movements become irregularly displayed, i. e. with too much impetus in one direction, and too little in another; and accordingly as such impetus is precipitately withdrawn from one or another organ or part, do venous congestions take place. Venous congestions, we say, since the very suspension of due action in the part concerned, by the deprivation or withdrawing of the *a-posteriori* stimulus, produces this condition of partial plethora on the side of the veins; a doctrine which, if we are not mistaken, Dr. Armstrong has been the first clearly to conceive, and properly to expound. But fever is often accompanied, not merely by venous congestion, but actual inflammation.

* It were more correct, perhaps, to say the state of the blood's distribution merely; for the condition and action of the vessels, both in fever and inflammation, are still questions, *sub judice*.

In what way is this last effect brought about? We might commence our reply to this question by propounding another, viz. What is inflammation? And here we think that the author before us is less precise and satisfactory in his pathological views. If we understand him aright, he seems to infer, that the same vascular plethora on the side of the arteries, which would produce congestion in the veins, constitutes, in the former case, actual inflammation; but the whole arterial system of a given organ might be brought into its utmost limit of increased action, or, to accommodate ourselves more to the author's views, increased distention, without being productive of positive inflammation; to constitute which, there must be what the schools formerly termed *error loci*, and perhaps, as Darwin maintains, the formation of new vessels. That topical inflammation, however, does often take place in fever, is sufficiently evident; and it would appear to arise from the very opposite condition of the nervous and vascular system of the part from that which induces congestion: the *a-posteriori* rush from the arteries is here too great, instead of being too little; not merely more blood is forced in and through vessels than is consistent with their natural diameter, but the vessels destined to convey the colourless particles of the vital fluid receive and transmit the coloured, a new and morbid set of actions is established, new vessels are formed, new secretions are poured out, and the whole order, both of the arteries and veins of the part, becomes widely different from that of mere congestion or distention.

It may, perhaps, be said, that we are wandering wide off our mark, in thus discussing the pathology of fever generally, while reviewing a volume which treats only on one particular species or kind of fever. The fact is, however, that though the book, now the subject of animadversion, professedly treats of scarlet and another eruptive fever only, its able author himself goes much more minutely into the question of febrile production and essence, than in his former volume on typhus; and here we must take occasion to refer to another principle of medical nomenclature, somewhat different from that we have above alluded to. While, in the cognomen fever, the word is meant to express the effect, or rather is taken and applied from

a conspicuous and prominent effect; the expression, scarlet fever, still, indeed, confines itself to appearances and symptoms, but is made to imply something more specific and precise in the way of cause; and here a door is opened for the discussion of that question, by which the medical world has recently been so much agitated, and upon which we could have desired to see the able mind and masterly pen of Dr. Armstrong employed in either one or the other of his recently published volumes. The distinction, we may just remark, between contagious and infectious diseases, appears to consist in the one being of a more specific and peculiar kind than the other: thus, what is called scarlet fever, will, whatever be the place in which it breaks out, and whatever the internal circumstances of the recipient, possess something of a determinate and distinctive character; while the cause producing typhus, if it could be brought to act in Constantinople, or the West Indies, would, in these places, under particular circumstances, be the cause of plague and yellow fever; or, in other words, typhus is to be ranked among the *νόσήμια ἐπιχώρα* of Hippocrates, viz. among those maladies which are dependent for their production and modification upon time, and place, and circumstance, while the scarlet fever is a disease of every latitude, of every season, and of every clime. They are both, however, contagious; and that the one appears less so than the other, is in consequence of the dependence just adverted to. We say that it would have been gratifying to us to have seen the question of contagion and infection discussed by Dr. A——, since the discussion might have been introduced into either his former or his present volume with great propriety, since much that is false in this particular has gone abroad into the world, and since any thing, bearing in any way on the subject of fever, would come from Dr. Armstrong with authority and effect.

On the disputed subject too of the periods of fever, the doctrine of critical days, and the question, Whether fever is ever actually cured by the interference of art, should the medical practitioner fail of success in his endeavours to cut short the disease, as it is termed*, by vigorous measures in the onset of

* The negative of the above proposition, respecting the curable nature of fever, has been argued for by a modern writer with much ingenuity.

the complaint? on all these particulars we should have listened with eagerness to the sentiments of the author before us. His volumes, we are confident, will require to be re-edited; and in his second editions it would gratify us to find that our hints on these heads had been attended to.

Fever, whether excited by cold, or filth, or confined air, or mental depression, or irregularities in diet, or epidemic constitutions of the atmosphere, or, lastly, by a specific contagion, as in the case of scarlatina, observes, in some measure, the same laws as to the actually induced state of the circulatory powers: accordingly, Dr. Armstrong, as in his former volume on typhus he divided the disease into simple, inflammatory, and congestive, so he pursues the same classification of the kinds, or rather the degrees of scarlet fever. By the simple grade of fever, would our author mean to designate that constitution of the malady, in which, either from a less degree of virulence in the morbid power, or from certain conditions of the recipient, or from early treatment of an active and judicious nature, the arterial actions and nervous congestions do not become permanently established, but every thing takes a temperate course, and the associate actions which constitute health are, sooner or later, gradually restored? What is meant by the congestive form of the malady may be easily inferred from the remarks already introduced on fever's pathology; and the author's notions may also have been gathered respecting the precise meaning which he attaches to the term inflammatory, as marking a degree of febrile action. In our minds, however, as already hinted, Dr. Armstrong too indiscriminately registers mere arterial action under the head of actual inflammation, which last state appears to us to be of a more complicated nature, and less recent induction in idiopathic fevers, than he, as well as other authors, seem to suppose. Before we introduce extracts from the description which our author gives of these different modifications of scarlet fever, we shall further use the freedom of suggesting whether the modifications themselves are not chalked out with a little more minuteness and precision than bed-side observations will confirm and ratify. Would not the clinical student, after perusing the pages of our author, imagine that he should always be able accurate-

ly to mark down in his note book whether fever were simple, inflammatory, or congestive? Modern writers have much less about them than formerly of these assumptions and divisions, but still the necessary discrepancy between book descriptions and bed-side observations is scarcely, perhaps, insisted on even by teachers of the present day with that particularity which the case demands. Beside, indeed, the varieties of scarlatina as constituted by the different degrees of congestion and inflammation, Dr. A—— assumes in common with other pathologists, or rather, he adopts from these writers the three divisions of the malady into simplex, anginosa, and maligna. This division he introduces in the following words:

“The scarlatina, simplex, anginosa, and maligna, are the three species into which most authors have divided this disease; and certainly the first of these adjunctive terms is sufficiently exact; but the last are objectionable, since they do not mark the proper character of the two remaining species. With respect to the epithet anginosa, it denotes a symptom more or less common to all the modifications*, and therefore cannot be correctly applied to one in particular. As for that of maligna, it expresses nothing distinct concerning the nature of the disease, and confounds under one species some striking varieties, while it also involves an hypothesis as to the presence of something hostile to the principles of life, and may thus mislead by its received import. Yet, to avoid innovation, I shall adhere to the old nomenclature, and to remove obscurity, shall, at the same time, point out those peculiarities of the complaint not included in our common classifications; and though little or nothing new may be adduced, relative to the first two species, it is hoped that some additional information will be communicated on that which is deemed malignant.”

As many of our readers will not have an opportunity of seeing the work itself, as it is important for the young practitioner

* This is an important remark in a diagnostic and practical point of view, since, when there is any doubt in the mind of the young practitioner, in reference to the precise nature of the cutaneous eruption, he may, for the most part, be convinced that the disorder is scarlatina, should there be much affection of the throat, in combination with the redness of the surface.—REV.

especially to familiarize himself with the most characteristic features of the disease under remark, and as our author's statement of the peculiarities of scarlatina constitute the principal portion of the mere descriptive part of his volume, we shall make no apology for extracting the whole of what he has given us as a description of the two first varieties of the complaint:—

“**SCARLATINA SIMPLEX.**—It is not unknown to me, that Sydenham and De Gorter have noted the scarlet fever under so mild an aspect, that it terminated spontaneously without any inflammation of the internal fauces. But so far as my observation has extended, the inflammation of the throat constantly attends the cutaneous affection: it even takes place in some cases without that affection, and, according to my experience, may therefore be fairly received as an essential part of this fever. The inflammation of the throat, however, is slight in the simple scarlet fever; that form of the disease which is usually ushered in without much rigour, or disturbance of the stomach; though uneasiness of the head, restlessness, and lassitude, are almost invariably present, with weakness of the pulse, and paleness of the face. These symptoms may continue from two to three or four days, and, designating the primary stage of the disease, are succeeded by an universal excitement. It is commonly within the first thirty or forty-eight hours of this second stage that the scarlet efflorescence comes out, first upon the upper, and then over other parts of the body; finally colouring the skin somewhat like the shell of a boiled lobster, and diffusing itself over the mouth, tongue, and throat. Early in the second stage some soreness or fulness is most frequently felt in the throat, and the voice is not quite so clear and sonorous as ordinary. The skin also, from the preternatural flow of blood towards it, soon becomes not only morbidly sensible to the touch, but rough, dry, and hot; though the temperature of it perhaps rarely rises above 103° of Fahrenheit's scale. The lips are now of a more vivid colour than natural; the face flushed and rather fuller; and the tongue whitish in the middle, but red round the edges. Except in children under two years of age, who are always very irritable, the pulse is seldom much above 110 or 120 in the minute; though during

the greater parts of this stage it is increased in tone as well as in velocity. For the most part the thirst is not very urgent, yet the functions of the stomach are always impaired, and the alvine evacuations often somewhat darker than common. The pyrexia slightly remits in the morning, and rising in the course of the day, mostly reaches its highest point about bed time, when a slight delirium sometimes occurs. But, as Heberden justly remarks, there is no form of fever in which such an occurrence is of so little consequence as in this; for as it proceeds from the exacerbations, so it almost always disappears on the approach of the remissions. The second stage, or that of excitement, seldom continues longer than four or five days, when it is followed by one of slight collapse, in which the pyrexia disappears, the pulse becomes slower and softer, and the skin more relaxed. About the time that the excitement gives way, the efflorescence begins to recede, and fades entirely away about the seventh day; after which there are commonly more or less scurfiness and desquamation of the cuticle.

“SCARLATINA ANGINOSA.—The scarlatina anginosa is more strictly an inflammatory form of the disease, and attacks nearly in the same way as the simple scarlet fever. But to greater degrees of chilliness, headach, and restlessness, in the first stage, are superadded a marked oppression of the præcordia, and prostration of the voluntary powers, with nausea, retching, or vomiting. The efflorescence most commonly appears on the skin within the first three days from the development of the excitement, and about the same time redness and swelling are observable on the internal fauces; the patient complains of stiffness in the neck and jaw, and fulness as well as soreness in the throat, particularly when he attempts to speak or to swallow. The pulse is throughout quicker than in the simple scarlet fever; the thirst greater; the tongue drier, and more florid at the edges; the uneasiness in the head more distinctly felt; the stools more unnatural and bilious; the heat of the surface more elevated, often rising to 106° or 108° of Fahrenheit’s scale, and even sometimes higher. The evening exacerbations are also greater, and they often induce a species of delirium, in which the patient, particularly if left alone, or in the dark, talks much to himself. In this modification of the disease, as

in most others, the affection of the throat is dependent in a great measure upon the fever: if the latter should kindly abate, from the first four or five days, there will be seldom either sloughs or specks about the tonsils; but merely an increased secretion of mucus, some of which often adheres to the part, and looks like an ulcer. But when the fever continues longer, or runs higher, specks generally form about the tonsils, which are finally converted into superficial, ash-coloured sloughs. Even when such cases are favourable, the throat is loaded with a glutinous mucus, and the pituitary membrane often much inflamed; but neither the discharge of the throat nor of the nose is of an offensive or acrid nature. The superficial sloughs in the throat begin to separate as the fever declines, which it frequently does about the eighth day, and then the sores beneath heal rapidly. It sometimes, however, happens that, instead of ending so favourably, very dangerous symptoms arise in the progress of the fever; and in most of these examples the sloughs grow fouler, and the discharge from them and from the nose becomes very acrid. Painful indurations of the glands in the neck, tenesmus, or diarrhœa, are then not uncommon, all of which seem to be connected either with the irritation or with the foul secretions of the fauces. Under these circumstances, patients sometimes gradually sink into an irrecoverable collapse; or expire from an attack of bronchial inflammation, or from gangrene of the throat. In other unfavourable instances, however, the danger is not confined about the throat, but rather proceeds from the brain, which is, sometimes, greatly affected in the stage of excitement; and the patient at last dies comatose, about the end of the second week. Again, in cases of a still different character, where the brain is less seriously disordered, symptoms of abdominal disease arise in the stage of excitement, and by degrees become most urgent. At first there are only slight pain and soreness in some part of the abdomen, with a quickened pulse and respiration; but the pain and soreness gradually increase, and at length are attended with vomiting, eructation, fulness of the belly, and general restlessness. In six, seven, or eight days, the abdominal soreness and pain abate or disappear, while the pulse grows more rapid and feeble; the breathing more anxious; and the vomiting more

urgent. Cold clammy sweats, and an universal collapse now speedily supervene, and are the immediate precursors of death.

The term malignant, as hinted above, was first introduced into medical nomenclature under the notion of a particular something in the complaint, *ab origine*, hostile to the powers of life; and the word has been, as it were, held out as a beacon to warn practitioners against depletory measures in this state of things, however great may be the apparent necessity for them. This feeling has certainly been acted on beyond the warranty of fact, but it may be questioned whether the reaction against our former unfounded fears may not be carried, in the present day, to the extent of too much boldness. But we must not anticipate what will immediately fall to be said under the head of treatment, and we shall now present the reader with an abridged account, from the author, of this variety of the complaint:—

“The fever is intense, and proceeds with impetuosity. Specks, therefore, are soon visible on the inflamed fauces: at first they are of a whitish, afterwards of a dingy ash, and lastly of a brown or blackish colour. But in the most formidable cases, the disease ends mortally before the throat passes through these gradations; and in general, it is only when the fever is lengthened beyond the fourth day, and there are ill conditioned sloughs, with an acrid discharge from them, and from the nostrils. In some instances, however, I have seen deep and extensive sloughs cast off on the fourth or fifth day of the excitement, and in others have known patients expire before they separated. Soon after the stage of excitement is developed, the pulse is rapid and vibratory; there is frequently a very great determination of blood to the brain, which speedily produces redness of the eyes; intolerance of light; throbbing pain of the head; tinnitus aurium; watchfulness; and confusion of the mind, or delirium. To these symptoms an overpowering but imperfect stupor often succeeds, now and then broken by loud screamings, or by fits of extreme violence or fretfulness. In some instances the head is less powerfully affected throughout; and during the whole stage of excitement, the patient complains most of pain, soreness, and heat, in some of the abdominal regions, accompanied with tension or fulness

of the belly; short, quick, anxious breathing; very rapid, small pulse; and considerable irritability and flatulency of the stomach. In other cases, neither the head nor belly seem so very decidedly affected as above described; but the greatest oppression appears to exist in some part of the pulmonary system, especially in the trachea. But whatever parts may be disordered, the stage of excitement soon begins to give way, and is followed by that of collapse, in which the heat is diminished; the general powers fail; the pulse becomes weaker and quicker; the skin laxer; the tongue fouler; and the respiration more laborious—in a word, those symptoms called putrid and malignant are now conspicuous. In this last stage patients sink under convulsions, vomiting, or suffocation, according to the organ principally affected. But in whatever mode death approaches, there is always, in the beginning of the disease, a marked and unequivocal stage of general and high excitement, to which the appearances of extreme debility and putrescency of the last stage may be clearly traced as mere consequences. It is this acutely inflammatory form of the scarlet fever, that Huxham, Heberden, and Cullen have denominated the most malignant; their descriptions distinctly showing, that very great excitement existed in the commencement, whatever degrees of putrescency might accompany the close.”

Having enlarged upon this form of scarlatina with a good deal of accurate observation, but to a length beyond the possibility of our limits to follow him, Dr. Armstrong, proceeds in the following manner:—

“Having thus endeavoured to give a brief exhibition of the pathology of the inflammatory forms of the scarlet fever, I shall pass on to the consideration of the congestive varieties, which will enable me to advert more distinctly to what has been called the scarlatina maligna.

“There are strictly two congestive forms of the scarlatina maligna, one in which the re-action is partially and irregularly developed, and the other in which it is almost entirely suppressed. The lines of distinction between these two forms being very obvious, it is only proper that they should be separately described. The first, therefore, shall be denominated the irregular, and the last the regular congestive form.

“ The irregular congestive form is the least dangerous, and more protracted of the two; yet it often proves fatal, either from some defect or delay in the treatment, or from the peculiarity of its nature. It comes on much after the manner of the preceding varieties; but the first obscure stage, in which the sense of chilliness, headach, sickness, and lassitude, commonly predominate, is almost always longer, and the following one of excitement much less perfectly displayed. Indeed, in the second stage, the heat is principally concentrated about the trunk and upper portions of the thighs and arms, while some part of the wrists, hands, ankles, and feet, is often cool, or at least of the natural temperature. The excitement, too, varies in the course of the day. During each increase of fever the rash becomes more florid, and fainter, as the re-action subsides; both the heat and colour of the skin undergoing correspondent changes to these temporary exacerbations and remissions. The patient sometimes complains of preternatural heat, and sometimes of preternatural coldness; and occasionally of the latter, when the trunk feels hot to the touch of another person. The throat is always more or less red and swollen, after the occurrence of the stage of imperfect excitement; and specks or sloughs generally appear in a few days.”——

“ The pulse is low and oppressed in the first stage, and it rarely acquires much firmness or fulness in the second, though it is then quick and variable. In its natural progress, this form of the scarlet fever is often protracted to the end of the second week, and occasionally much longer. When it ends successfully, the recovery is frequently very slow, on account of the great collapse which succeeds to the state of imperfect excitement. If it be not actively treated soon after the attack, there are, for the most part, symptoms which indicate some serious affection of the brain, liver, stomach, or of other important parts; and if these symptoms should not be speedily arrested, they may gradually or suddenly become much aggravated, and at last terminate life by coma, or low muttering delirium; by vomiting and purging; or by apparent suffocation. Towards the conclusion of such cases there are frequently appearances of a dissolved state of the blood, as inky petechiæ, oozing of black gore from the nostrils, and the like.”——

“The regular congestive form, next to be examined, so oppresses the vital functions in the first stage, that there is then still greater internal remora of venous blood, and less internal and external re-action of the arteries, than in the fore-mentioned variety. The subjects of this modification are for the most part suddenly attacked. They become pale, faint, and sick; and chiefly complain of pain, load, or giddiness in the head; extreme oppression; and much uneasiness in the region of the heart, or at the pit of the stomach. Sometimes, they at once sink, as if overcome by an uncommon shock, and lie in a state of confusion and oppression, without making much complaint. At other times, they walk about pale and languid for two or three days, and then take to their beds, like persons completely worn out by some great fatigue, or mental anxiety. When the attack has once decidedly occurred, the respiration is either quick and anxious, or slow and impeded. There is often a mixture of livor and paleness in the face; the eyes are frequently dull, but sometimes glairy, and they acquire a fatuous or an inebriated expression in the course of the disease.

“The mind, at first alarmed, confused, or dejected, soon becomes disordered with delirium; or an indifference to surrounding objects, and a stupor succeed, under which patients finally expire. From the beginning the pulse is generally low, quick, and irregular, and commonly continues so to the last; but in those cases where there is a very slight degree of re-action, it sometimes has a short and rather a sharp feel for a certain period, and finally grows weak and undulating. At first the tongue is commonly whitish in the middle, paler than natural, and covered with slimy saliva; but towards the close it often becomes rough and darkish, and the breath is then usually offensive. The bowels are commonly distended with flatulency, constipated or irregular in the first stage, but frequently loose in the last. The fæces are sometimes darker, at other times lighter than natural. The stomach is often extremely irritable; yet occasionally it retains every thing that is taken; though the deglutition becomes more difficult as the disease advances. This form of the scarlet fever frequently runs its fatal course in two, three, or four days, from the oc-

currence of the extreme general oppression; and there are almost always appearances of putridity in the last stage, such as oozing of blood from the mouth or nostrils, dark hemorrhages from the bladder or bowels, inky petechiæ, or gangrenous spots upon the skin. A few hours before death there is often a superficial glow of heat diffused over the body, accompanied with a darkly flushed face, high breathing, accelerated pulse, and partial or general sweats. But this mere semblance of excitement soon subsides: the extremities grow cold; the face assumes a cadaverous hue; and where the skin is pale it often has almost the smooth, waxen appearance of the surface of a corpse."

It is necessary to apprise the reader, that throughout the whole history of scarlatina maligna, we have made very considerable abridgments, since the full detail of the author would have been quite inconsistent with the boundaries prescribed to the analytical department of our Journal. It has, however, been our aim to present the most important facts mentioned by Dr. Armstrong, as characteristic of this, the malignant species of the disorder.

We are now to mention the author's mode of treatment in scarlatina through its several stages and varieties. In the simple form of the complaint we are told, that "a brisk purgative first, a mild emetic next, and the tepid bath last, are of the most essential service." When the re-action emerges, the tepid effusion should be used four or five times in twenty-four hours, and an active aperient given daily, with rest, ventilation, cleanliness, and bland liquid diet. "In the stage of collapse, which is usually very slight, milk, light animal broths, and similar articles, should always be preferred to wine and cordials:" and this last caution Dr. Armstrong insists upon as a matter of much necessity in practice, since he conceives that inflammatory and even hydracephalic irritations are likely to follow the free and indiscriminate employment of stimulating, irritating materials, under the notion of the necessity for exciting the torpid system during the condition of collapse. Where any stimulus beyond bland nutrition is judged necessary, our author tells us that "mild fresh ale has been his substitute, since this excites much less than wine, and often tends to re-

store the tone of the general habit and keep the bowels moderately open;" which last particular he conceives it expedient to attend to after the cessation of the complaint, in order to prevent its common sequel.

With respect to the scarlatina anginosa, our author remarks, that the treatment likewise in the first stage "should consist in brisk purgatives, a mild emetic, the warm bath, and bland tepid diluents; unless there be decided marks of visceral oppression, and then, as an additional measure, a little blood should be drawn." During the stage of excitement we are directed to use the cold affusions promptly, and to repeat them for the first four and twenty hours, as often as the burning heat and dryness of the skin return. Dr. Armstrong is of opinion that it is only within the first three days of the stage of excitement in this variety of scarlatina, that the cold affusion will generally be of the most decided benefit; and he thinks that Dr. Currie and his followers have rather too highly estimated the effects of this practice in scarlatina. According to his experience, the affusions should never be trusted to alone, but ought always to be combined with purgatives, and after the third day of the excitive stage, he prefers the employment of tepid affusions with purgatives; which last, "to be sufficient, should be used six or eight times every four and twenty hours during the stage of excitement."—"When symptoms of a *subacute* visceral inflammation appear on the first, second, or third day of the second stage, there need commonly be no hesitation about general blood-letting, provided it be used soon after those symptoms apparently originated. But when the visceral inflammation has been permitted to advance two or three days without resistance, or when it arises about the sixth or seventh day of the second stage, it often becomes a delicate point to determine whether the lancet should be employed. If there be appearances of universal collapse, and of an approach to gangrene in the throat, all thoughts of bleeding ought to be abandoned; and in the advanced stage of the disease, our author thinks that even blisters ought seldom to be applied, as they then not only produce much general irritation, but are sometimes succeeded by a gangrene of the part to which they have been applied. For the purpose of

clearing the throat, Dr. Armstrong recommends mild emetics; and when acid gargles are used, they should be injected with a syringe. Wine ought not, he tells us, to be used in the first or second, but only in the third stage of the scarlatina anginosa, when "there is an urgent debility:" and this ought not to be given, as is often done, in a state of convalescence. Upon the whole, purgatives, aided by the cold or warm affusions, are the principal things to be depended upon in scarlatina anginosa. Calomel and active cathartics in the first and second, and mild laxatives in the last stage.

In the scarlatina maligna, says our author, instead of adopting the stimulant plan, let the practitioner give a fair trial to the cold affusions as soon as the stage of excitement is developed; "and if they should not effectually reduce the fever, let him not pause an instant longer, but open a vein in the arm or neck, or a branch of the temporal artery, and allow the blood to flow until it is stopped by an approaching faintness." If this should not give a marked relief to the most prominent symptoms, a second but more moderate venesection should be tried in an hour or two afterwards. The head should always be raised very high, and after having been shaved, it should be repeatedly covered with folds of linen soaked in cold water. The bowels, immediately after the bleeding, are to be opened by very large doses of calomel and jalap, aided by the sulphate of magnesia, or some other neutral salt, and "the purgative plan must be persisted in vigorously, in combination with the calomel, until there is a visible change for the better in every respect. The following sentence we extract whole from the author:—

"But it must be recollected, that these powerful proceedings must be solely confined to the stage of excitement, and that unless they are carried into effect within the first thirty hours of that stage, nothing decidedly beneficial is, for the most part, to be expected from them. Having too frequently witnessed the fatal results of depletion, when prosecuted in the last stage, and likewise the complete inefficiency of half measures in the second, I am certain, that nothing short of very early, prompt, and decisive blood-letting and purging can afford a fair chance of success, when the cold affusions fail in

the first instance. No cases of this form of the scarlet fever have come under my observation, in which diffusible stimulants appeared to be really serviceable in the first and second stages; but, on the contrary, several cases have occurred in which they were rapidly destructive. Bleeding and purging, however, employed at the time and in the mode above recommended, have been the means of snatching many patients from the most imminent peril. Nevertheless, it is only justice to acknowledge, that though the depletory practice has frequently succeeded, it has also sometimes failed, even when fairly and fully tried. But what method of treatment is always successful in acute diseases? The most judicious and well-timed depletion now and then fails in simple inflammations of the viscera: yet the knowledge of this fact forms no objection to its general applicability in those affections; neither ought the occasional failure of the above measures, in the highly inflammatory variety of the scarlet fever, to be made a ground of objection against the general propriety of their early employment."

Such are Dr. Armstrong's rules for treatment in the first or inflammatory species of scarlatina maligna. In the irregular form of the congestive species, or that "in which the excitement is partially developed, purgatives and the warm bath are the best remedies." The bath he directs to be used about twice in the twenty-four hours for the first four or five days, and then only once in the same time, unless there be appearances of recovery. The purgatives, we are told, should be exhibited so as to move the bowels about four or five times daily, so long as the general oppression and irregular state of the excitement remains. In conjunction with aperients and the warm bath, small doses of pulvis antimonialis, or of the liquor ammoniæ acetatæ, may be sometimes useful as diaphoretics; although small and repeated doses of carbonate of ammonia are often superior in occasioning a gentle and general perspiration, which materially contributes to remove internal congestion. It is commonly necessary, in this form of the disease, to give moderate portions of some diffusible stimuli as soon as the stage of collapse approaches; and mild brisk ale, or porter, is one of the best that can be given to children, or a little Madeira wine diluted with milk.

In the regular form of the congestive scarlatina, the period proper for venesection is, for the most part, limited within the first twenty-four hours of the decided signs of congestion: the first thing to be done is to immerse the patient in the warm bath, strongly impregnated with salt, provided it can speedily be prepared: while he remains in it, or immediately after he comes out of it, as much blood should be extracted as will free the pulse from oppression, the skin being in the meantime well rubbed with coarse flannels, dipped in some stimulating liquid, such as warm vinegar and salt. The practitioner must keep his finger upon the pulse while the blood is flowing, in this congestive form of the disease; and if the beats of the artery rise in force, he may safely proceed to a moderate extent, but venesection should never, as in the inflammatory variety, be carried to the extent of producing fainting. In conjunction with these means, calomel must be boldly used in order to equalize the circulation, and reproduce a secretion of bile, which is often for a time suspended during the congestive state: if this should not purge, it must be assisted by other cathartics, after it has been two or three hours in the intestines; and where the stomach is exceedingly irritable, it may be advantageously exhibited with small doses of camphorated tincture of opium, which accelerate its action on the skin, and do not retard either its specific or purgative operation. When excessive irritation, connected with debility, exist in the very last stages of the complaint, Dr. Armstrong recommends moderate, or even very large doses of opium: and he cannot, he says, illustrate the utility of this drug better in such cases, than by comparing it to the effect produced by its administration in the last stage of cholera morbus, "sometimes snatching patients from the very jaws of death."

In the above sketch of Dr. A——'s opinions and practice, we have refrained from comments, and have, for the most part, expressed ourselves even in the words of the author; as we have been anxious that the reader should be put fairly in possession of the inferences to which Dr. A——'s experience has led him. He concludes his section on scarlatina by stating, that he has abandoned the stimulant plan of treatment, even in the most malignant forms of the complaint, from having

ascertained its inefficacy; and since he has had recourse to depletory measures of an active and decided kind, he has practised (he tells us) in the disease with much more satisfaction of mind, arising from far greater evidence of success. The following are the concluding paragraphs of his treatise on scarlatina:—

“It is my firm persuasion, that most of our worst fevers, may be arrested at the first attack by right treatment. At the same time we must be careful to discriminate the characters of the affections for which we prescribe; since, though it may be dangerous to delay active means in some varieties, it is highly injudicious to employ them in all. Practitioners of experience must have observed, that the scarlet fever is sometimes so mild a disease, as hardly to require any medicines; that at other times it is more strongly characterized, though still readily controllable by purgatives, and the cold or tepid affusions; and that it is also occasionally so violent from the beginning, as to render the agents commonly used quite unavailable. All these circumstances must, therefore, be borne in mind, that the remedies may correspond to the different appearances which the disease assumes. It is in the severest forms, and in them only, that extraordinary measures are required; and to extend those measures to other forms, would be a perversion of the principles laid down in these pages.”

Before the entire dismissal of the topic, it may be allowed us just to remark, that we fully accord with Dr. Armstrong in the opinion, that what is done in the way of depletion—we mean of vascular depletion—should be done early: but we esteem it further our duty to state, that the result of our own unbiassed observations on the head of treatment in febrile diseases of all kinds, is rather in favour of local blood-letting, in combination with purgatives, pure air, cold and tepid ablutions, with the occasional use of diaphoretic stimulants in the absence of heat, and of saline diaphoretics during the pyrexial state, than of emptying the blood-vessels in the manner and to the extent which Dr. Armstrong recommends. Our remarks, of course, must be considered as applying to the general run of febrile disorders (both dependent upon specific contagion, and otherwise) that are met with in the metropolis.

Certain it is, however, that we have gained a great deal upon our immediate ancestors, in discarding the notion of debility, as the cause and essence of fever; that we have come to a more correct appreciation of the pyrexial state by viewing it as latent, or interrupted, or smothered excitement, rather than actual weakness; and that the correct principle of treatment, in all fevers, is that which directs the *equalization*, and not the increase of the vital powers.

In his section on measles, Dr. Armstrong is more cursory, and, as above remarked, less descriptive, than when on the subject of scarlatina. His first object in this division of his volume is to show "what modification of measles require active, and what gentle expedients." It is our author's opinion that bold depletions are not so admissible in measles as they are in scarlatina. "Decisive measures (he tells us) ought only to be used in the first stages of measles, when the symptoms of congestion are immediately urgent; and even then we should not push the depletion too far, as moderate evacuations, aided by the warm bath, will answer a much better purpose." In this disease, "simply procuring about two, or at most three moderate motions in the twenty-four hours, until the eruption appear, will be all that are necessary; and when the eruption has appeared, still we must be more sparing of purgatives than in the scarlatina, although, to a certain extent, they are then highly useful." When the lungs appear greatly oppressed, as indicating pulmonic congestions, an antimonial emetic is recommended; and the author here takes occasion to say, that the use of purgatives, which recently has so much obtained in almost all diseases, may probably have occasioned an unwarrantable inattention to the effects of emetic operation in many congestive complaints. Having thus briefly observed upon the circumstances and requirements of the first stages of the measles, Dr. Armstrong prosecutes the history of the disorder in the following terms:—

"Between the time of receiving the contagion of the measles and its actual operation, a few days, or one, two, or even three weeks may intervene; and from the first signs of sickening to the appearance of the eruption, a period may elapse of twenty-four hours, or of several days. In general, however,

the affection of the skin is later in coming out in this distemper after the formation of the fever, than either in the scarlatina or in the small-pox. Several writers have stated, that the rash appears on the fourth day of the fever in the measles; but as the term fever has not always been strictly defined, their meaning is liable to considerable ambiguity. If under the word fever, these writers comprehend the interval of time between the first palpable signs of indisposition and the appearance of the eruption, the statement is not generally correct, agreeably to my observations; for I have seen the eruption appear at different periods in different individuals during this interval, as it is then greatly dependent on the state of the systems infected, some of which re-act slowly, and others rapidly. But if, as it would really seem, these authors mean by the fever the development of the arterial re-action, still I must contend, that the rash does not uniformly, does not generally appear on the fourth day from the first development of the re-action: and in support of this opinion, I can most confidently declare, that I have seen the rash come out at all times between the first and the seventh days from the occurrence of the re-action, though perhaps the most common period of its appearance is between the third and the sixth day. To settle this point rightly, we must not fix the general term of the eruption from a particular constitution of the measles, but rather endeavour to deduce it from an extended view of different constitutions; and, probably, if we were to make ourselves acquainted with the circumstances under which the rash appears so variously as to time, we should be able to account for differences in this particular, and to arrange them with a natural precision. It is true, that there is both regularity and simplicity in the operations of nature; but we frequently frame our ideas of this regularity and simplicity, not from a comprehensive, but from a limited survey of her works. The current notion about the eruption generally coming out on the fourth day of the fever in the measles, has probably been taken up and propagated on the authority of Sydenham: but that illustrious author appears himself to have drawn his inference from *one* epidemic, which prevailed widely in the year 1670; and he, perhaps, too precipitately marks, as something anomalous, another and less ex-

tensive epidemic of the year 1674, in which the eruption came out sometimes sooner, and at other times later than the fourth day of the fever. Numerous errors of opinion and of practice, in many important concerns of life, may be traced to an implicit reliance on distinguished authorities; so natural it is for man, who is the creature of obedience, to pay a sort of spontaneous respect to his superiors in rank, in reputation, or in genius.

“The watery, heavy, loaded eye, the catarrhal symptoms, the less diffused appearances of the rash, and the greater feeling of the inequality to the touch on certain parts of the skin, are some of the chief marks of distinguishing the measles from the scarlet fever; and for the welfare of the patient, not to mention the credit of the practitioner, these and other diagnostics, which authors have laid down, should be strictly regarded, as the two diseases not unfrequently rage at the same time, particularly in damp weather. The catarrhal symptoms often exist several days before the rash, and seem in the onset to be among those effects of the internal congestions previously noticed; but they are seldom relieved by the eruption at first, nay, generally become worse for a certain period afterwards, and are always connected with less or more increased action of the arteries, when the fever fully emerges.

Should this eruptive stage, Dr. A—— remarks, proceed without being attended with pain, soreness in the chest, oppressed breathing, or other marks of inflammatory irritation, we shall have no occasion to bleed; but “where these are present, venesection, either general or local, will almost always be necessary.” Here our author introduces a most important caution, with respect to the necessity of carefully distinguishing mere hurry of breathing and oppression about the chest, from that state of the respiration which marks actual inflammation: “the former state (he well remarks) is seldom permanently the same, but varies so much at different times, that the patient will seem now much oppressed, and again easy. Besides, the anxious breathing, which arises from irritation, is generally increased by the erect position; and that which arises from inflammation, more or less diminished: in the first, the child now and then obtains pretty tranquil slumbers, with lit-

the motion of the chest; but in the last, the sleeps are always very disturbed, and the chest may be seen heaving up and down with an unnatural labour." When there are no signs which indicate internal inflammation, Dr. A—— conceives that gentle purgatives and tepid diluents for the purpose, as it has been termed, of determining to the skin, will usually bring the disease to a favourable issue. He informs us, that it has occurred to him more than once to have seen mild measles treated variously, "sometimes by bleeding and blisters, sometimes by purgatives and tepid drinks, and sometimes by nauseating doses of antimony;" and the result of the different methods has justified his opinion, that the plan of moderately moving the bowels, and determining to the skin, is the most safe and efficacious. Some practitioners, indeed, conceive, that the less urgent cases of this disorder ought to be left entirely to nature, without the interference of art in any shape: but Dr. Armstrong imagines, that the plan of treatment just proposed is more desirable, in order to prevent the probable occurrence of topical inflammations, either of a more active and violent, or more slow and insidious nature.

When the excitement, or menace of inflammation runs so high as to demand general bleeding, our author recommends that the jugular vein be the vessel from which the blood is taken; and with regard to the quantity to be abstracted, he tells us, that "at the completion of the first year three ounces may be accounted a moderate bleeding, four ounces at that of the second, and five at that of the third; but after a child has passed his fourth year, and has been tolerably healthy before, he will bear general bleeding much better than prior to that period." Dr. Armstrong here enters his protest against that freedom with which some practitioners talk of, and practise blood-letting in young subjects; and we earnestly recommend to those who are imbued with the sanguinary doctrines of the day, an attentive consideration of these valuable remarks. After profuse venesection both in young and old, but especially in children, there is often an agitative excitement, if we may so say, that is truly nervous, but which is very apt to be regarded as indicative of a necessity for more blood being drawn; whereas, the precisely opposite conclusion is the one

which ought to be made and acted on. Where this kind of irritation succeeds venesection, our author expresses it as his opinion, "that the lives of many children may be saved by the exhibition of a few drops of laudanum, with a little light food afterwards;" and he adds, "if we bleed too profusely, they will generally sink under the shock which the nervous system sustains." Blisters, Dr. Armstrong imagines, are sometimes injuriously applied to the chest in pulmonary inflammation, and he cautions against the employment of these agents before the excitement has been somewhat subdued by other means. The young practitioner will do well to recollect this caution: these external irritants, are, we feel convinced, too indiscriminately had recourse to as anti-inflammatory measures, and when applied in states of much fulness and excitement, they are often liable to defeat the ends for which they are employed. On the head of cold affusion, and general exposure to cold media in measles, Dr. Armstrong is, in our minds, exceedingly judicious in his animadversions. By some, these have been considered equally applicable in this disease as in scarlatina; but the skin is frequently so susceptible of external impression, and the *pulmonary organs* thereby so liable to be affected, that it is exceedingly questionable whether that be the case in any instance; and in respect to the temperature of the air, our author, while friendly to ventilation, considers that the external heat should be regulated in rubeolous cases as equally as possible between the ranges of 50° and 60° . Much attention, we are likewise told, is requisite after the rash fades away; and it is remarked, that many children might be saved from those pulmonary affections of a serious kind, which so often occur as consequent upon measles, by their being clothed properly after the complaint has disappeared. When the disorder has declined, and especially when pulmonic attacks are threatened, it is expedient, our author thinks, to preserve the bowels for some time in a lax state, to adopt warm clothing, a cooling diet, and the occasional use of the tepid bath. Dr. A—— lastly dwells upon the expediency of suffering any cuticular affections that may occur as sequels of measles, to pursue their own course without the use of any sanative measures; "for although they may be temporary blemishes on the

surface, they are often the occasion of saving the vital works within."

"And where there is any known or suspected tendency to pulmonary disorders, a preventive regimen should be the more rigorously enforced; for, independently of those already pointed out, there are some obscure affections of the lungs, which are apt to be engendered after the decline of the rash, from the influence of cold and other causes. The general scheme of this work will only allow me briefly to advert to such affections under the head of pulmonary consumption: and even then it will be necessary to embrace some points not strictly relevant to the secondary effects of the measles; but these may be excused from the nature of the subject, to illustrate which, requires the lights of collateral circumstances."

It may seem, in some measure, a departure from the regularity of medical disquisition, to go immediately from scarlatina and measles into the consideration of pulmonary consumption: there is, however, in point of fact, a singular propriety in making the discussion of pulmonic affections follow upon the exanthemata, as they have been nosologically named, since much oftener, perhaps, than is generally suspected, these eruptive complaints lay the foundation of eventual and irremediable disease in the lungs. "If your patient" (says Dr. Beddoes, quaintly but expressively,) "who is convalescent from scarlet fever, small-pox, measles, bark but once, fear lest there be a murderer within; and though dislodged, expect him again, he now knows the way." The principal mischief which the exanthemata mismanaged or neglected are likely to produce, is probably the formation, in the parenchymatous substance of the lungs, of those bodies that are called tubercles, and which constitute, so to say, the seeds of genuine phthisis—seeds which engender their baleful fruit in the soil, and at the season of consumptive development; and thus come to constitute the real tubercular phthisis. But, as consequent upon these eruptive affections, and also as arising out of other sources, there often occur pulmonary derangements, which, although different diseases from genuine consumption, are apt to be viewed and treated as instances of this last disorder. The affections which Dr. Armstrong enumerates as occasionally

bearing a resemblance to real tubercular phthisis are four, namely, chronic inflammation of the bronchia, ulcerations in the trachea, chronic inflammation of the pleura; and, lastly, chronic and simple inflammation of some portion of the lungs themselves. It is evident, from this enumeration, that our author considers phthisical inflammation to be of a peculiar and specific nature; and this it most certainly is, notwithstanding the recent attempts which have been made to generalize all pulmonic susceptibilities as it were into one species.—Dr. Armstrong says,

“Chronic inflammation of the bronchia is sometimes the sequela of an acute attack of pulmonary inflammation; at other times it arises out of a common and neglected catarrh in irritable or debilitated habits; and occasionally it is connected with a disorder of the liver, or of some other distant organ. When it exists alone, the symptoms resemble those of an ordinary catarrh for some time; and most frequently the attention of the practitioner is only excited seriously by their continuing unabated, when they might have been naturally expected to decline. On a close examination, however, the pulse will be found quicker than natural, more especially towards the evening, and the heat of the skin rather above the usual standard, though it varies in the course of the day.—The patient can generally lie equally well on both sides, though the horizontal posture usually renders the breathing more uncomfortable, as well as the cough more troublesome for a time; and a request is generally made to raise the upper part of the bed by pillows, that the shoulders and the head may be elevated during sleep.—In the majority of cases, the sputa are at times mixed or streaked with blood, which comes from the small vessels of the bronchia; and at first they are commonly glairy, somewhat like the white of an egg; and though they grow opaque as the disease advances, yet in general a considerable period elapses before they become really purulent. When this chronic inflammation is protracted, and when pus is copiously expectorated, it is attended with nearly as much emaciation and debility as the tubercular consumption: but it sometimes happens that it is not thus protracted, the supervention of an acute inflammation unexpectedly carrying

off the patient. Where it proceeds to an advanced stage, it will mostly be difficult, if not impossible, to distinguish it from the tubercular consumption, particularly when it has caused an abscess in the lungs themselves. During the early stage, however, it may be recognised by its catarrhal character, by there being less wasting of the flesh and strength than in the tubercular consumption, and by the concomitant fever then not assuming the true hectic type. From the commencement there is indeed a slow fever; but night-sweats rarely take place until the expectoration becomes purulent, though the skin is occasionally moist and cold in some parts during the remission of the pyrexia.—When chronic inflammation of the bronchia is combined with an affection of the liver, or of some other abdominal organ, the patient, in general, can only lie with any degree of comfort on the right side, or flat upon his back. The quantity and quality of the expectoration, the character of the fever, and the other circumstances before enumerated, will enable the practitioner in the onset, and in part of the advancement, to distinguish this combination of complaints from the tubercular consumption; while the furred tongue, the foul breath, the unnatural stools, the capricious appetite, the distended epigastrium, and the uneasiness which generally attends pressure on some part of the abdomen, will sufficiently mark it from the simple chronic inflammation of the bronchia first described. Both these varieties of disease may arise after the measles from the influence of cold, or from some disorder in the digestive organs: but they are likewise not uncommon after other affections, which predispose the lungs and the liver to increased action; and they may sometimes be directly traced in delicate habits to vicissitudes of the weather, or to errors of diet, and too light clothing.”

With the exception of some few passages, which our confined limits have compelled us to omit, we have thus extracted Dr. Armstrong's description of bronchial inflammation; a description marked every where by accuracy and truth, and to which we beg leave to call the attention of such readers as are anxious to obtain diagnostic information on disorders of the lungs. It is with particular pleasure that we dwell on this division of the author's treatise, since we consider the business

of distinguishing the nature and kinds, and extent and localities of pulmonary ailment, to be a matter of much pathological and practical moment; and since we conceive that the subject has hitherto not been dwelt upon with that particularity and distinctness which its importance demands.

Tracheal ulceration, the next affection marked by Dr. Armstrong as offering an occasional resemblance to real phthisis, is "denoted by little more than a tickling cough, slight change of voice, obscure uneasiness in some portion of the trachea, occasioning an oppression of breathing, and a slow increasing fever. Slight traces of inflammations often exist, at the same time, about the pharynx or the tonsils." In the progress of this affection and when ulceration comes to be established, the body wastes under a degree of hectic irritation; "but there is rarely the circumscribed patch of bright red on the cheeks, *with the glistening eye*, observable at the exacerbation of the hectic, which attends the tubercular consumption." This complaint, our author tells us, is sometimes accompanied by, and at the least rendered more severe by its connexion with a syphilitic taint: and he has known, he says, two examples of this kind treated as *pseudo-syphilitic*, under an impression that all the symptoms resulted from sympathy with the digestive organs. Here Dr. Armstrong takes occasion to warn the practitioner against the generalizing notions of the times in reference "to the specious doctrines of pseudo-syphilis;" and while he admits that the researches of Mr. Abernethy are marked by a spirit of philosophical acumen, he conceives that the great authority of his well-earned reputation is calculated to have an injurious influence upon such minds as are apt to receive those doctrines without limitation, and without inquiry, that come into the world under high sanction. "When an ulcer in the trachea is venereal, the real nature of it may be inferred from the other secondary symptoms of syphilis which are manifest at the same time, as the peculiar deep sore in the throat, the copper-coloured spots on the skin, or the like; and where such symptoms have been absent throughout, the ulcer will almost always be found to have proceeded from an inflammation of a different kind."

Pleuritic inflammations of a chronic nature, have not, Dr.

Armstrong says, been sufficiently recognised by practitioners in general. Baglivi, he informs us, is the only author who has pointedly and particularly alluded to the probability of a chronic inflammation going on in this membrane, which is not detected without much attention. "In order," Baglivi says, "to discover these occult and indolent pleurisies, make the patient lie down on his right or left side: after he has inspired with force, and coughed once or twice, ask him if in breathing or in coughing he felt no pain or heaviness in any part of his breast; and assure yourself that a pleurisy is seated in that place where he feels the pain or heaviness." Dr. Armstrong tells us, that this chronic inflammation of the pleura is principally distinguishable in its earliest stages from the tubercular consumption, by the uneasiness in the side being confined within a certain space, by the gradually increasing difficulty in the breathing, by the common motion of the body aggravating, and by rest alleviating the symptoms: and in the last stages it is to be discriminated by the fever not observing the hectic character, and by the absence of pus in the expectoration, which throughout is usually scanty.

The last affection mentioned as indiscriminately registered at times under the head of true phthisis, viz. chronic inflammation of a common kind, is very often, and indeed most usually connected with the pleuritic disorder; and although it does occasionally exist independent of such disorder, Dr. A. confesses that he knows "no symptoms which can enable us to say when chronic inflammation of the lungs is, and when it is not, connected with chronic inflammation of the pleura; and if we possessed any facts enabling us to determine this point, still they would be of little practical utility, since the treatment must be similar, whether simple or combined."

Besides the more general causes of this last species of pulmonary inflammation, our author conceives that its foundation is sometimes laid by coagula of blood retained after an hæmoptoe; and he says he knew one instance which dissection showed to have arisen from a deposition of calcareous matter, which had probably been secreted from the bronchia. Morgagni, it is well known, talks of calcareous formations in the lungs, as for the most part pregnant with very considerable

danger; but our present author is disposed to consider those concretions, not unfrequently, signs of the pulmonary affection being about to terminate favourably; and that this is often actually the case, we feel convinced by our own observation. In a recent instance that came under our notice, in which pulmonary inflammation and apparently tubercular ulceration followed a fever of considerable duration and violence, the young lady, the subject of the affection, coughed up some calcareous matter, and almost immediately the signs menacing confirmed phthisis gave way. This was most probably a case of mere pulmonic, which resembled phthisical inflammation; and had it proceeded a little further with an eventually favourable result, the recovery would by many have been considered a recovery from actual consumption.

Having thus discussed the nature, and described the symptoms of those affections, which, without considerable discrimination on the part of the practitioner, might be considered and treated as genuine consumption, Dr. A. proceeds to remark upon this last disorder, which, as before hinted, he very properly regards as being peculiar to the strumous temperament. In what scrofula actually consists, has been, it is well known, a matter of much controversy; nor is the dispute at this moment brought to any satisfactory issue. Dr. Cullen's definition of the strumous temperament, that it consists of "a peculiar state of the lymphatic system," is confessedly rather a cutting than an unravelling the knot of controversy; but we are disposed to regard the present author's account of the matter to be also somewhat gratuitous, and, perhaps, rather too accommodating to the reigning pathology of the present day. So far from an "unusual irritability of the capillary arteries" being invariably an attendant upon the scrofulous constitution, do we not often see this constitution most conspicuously characterized in cases of pervading torpor? Indeed, it would appear, that *in*irritability of the capillary order of vessels is frequently an unequivocal accompaniment of several scrofulous affections; and when irritation and action do take place in these affections, such irritative action would seem to grow out as it were of actual weakness. Neither, to our critical requirements, does the conjecture seem quite satisfactory, that Dr.

Armstrong makes on the question of tubercular formation and deposit; for even in common inflammation of the parenchyma of the lungs, there must of necessity be "some exudation from the minute vessels in the cellular tissue of the lungs;" and yet we do not see that such exudations ever constitute tubercles. But whatever be the precise nature of the scrofulous temperament, in whatever manner we are to explain the rationale of tubercular lodgment in the pulmonary texture, pretty evident it is, that these deposits are easily excited by common causes of irritation in strumous subjects; and that without such constitutional temperament being present, an equal quantum of pulmonic irritation will not engender them. These irritations are either external or internal, immediate or sympathetic; that is, they may consist in causes productive of vascular impetus directed at once to the pulmonary organs, or from irritations and inflammations of other viscera, or even more remote and seemingly less connected parts and organs.

"Tubercles (Dr. Armstrong well observes), may be roused into action, or perhaps actually produced in the true phthisical habit from a remote irritation; for whether that irritation be external or internal, it may, through the nervous operating on the vascular system, so increase the action of the capillary vessels in the lungs, as at once to prove a principal cause of this disease. In some patients predisposed to phthisis, I have seen a short tickling cough arise and disappear with the primary symptoms of syphilis; but in others, who had exposed themselves to cold, or who had taken mercury injudiciously, I have known the cough advance until suppuration of the lungs took place. Again, in constitutions of a similar cast, I have witnessed a train of dyspeptic symptoms from a stricture in the urethra, and these at last were succeeded by tabes of the lungs. From the consideration of such facts, therefore, we cannot be too careful in speedily removing any irritation from a phthisical habit; for even if that irritation should not at first be dangerous in itself, it may in the end become highly so, by implicating the pulmonary organs in disease."

Our author takes occasion further to observe on the important connexion existing between the skin and the pulmonary organs, and upon the special necessity of attending in phthisis-

al habits to the cutaneous functions. It is a well known fact, that the ancients were much more attentive to the state of the body's surface than we are in the present day: and Dr. Armstrong, with others, lays especial stress upon the great importance, in pulmonary disorders especially, of preserving the cutaneous excretion in constant and uninterrupted exercise. It is known, that in the north of Europe, the inhabitants are much more attentive than we are in Britain, to an undeviating preservation of external warmth; and the comparative immunity from consumptive complaint, of some of these nations particularly, is strikingly obvious. Our author is inclined to attribute, even the proverbial exception of sailors from pulmonary maladies, to "the thick flannels with which these men cover their surface when on ship-board."

The old practice of setons or issues in the skin as preventive of pulmonary consumption, Dr. Armstrong imagines might be revived with much benefit. "Nevertheless, the local external irritation ought never to be carried so far as to produce a general re-action of the heart and arteries; for when that is the case, the general re-action will of course extend to the capillaries of the lungs, and thus the external local irritation may prove a mean of actually exciting what it was intended to prevent." These applications appear to us to be more applicable in cases where the ulcerative stage of the disorder has come to be established; and we think we have witnessed, at least, the prolongation of life, if not the cure of the complaint, by setons and issues made in the fleshy part of the chest. Over the true, phthisical, tubercular ulcer, these remedies possess, probably, no more at farthest than a mere palliative influence; but in cases of common abscess of the lungs, it has occasionally seemed to us that they have operated radical and permanent benefit.

We do not think it necessary to pursue Dr. Armstrong through the several causes calculated to create consumption in the phthisically disposed by nature; such as "various diseases, great fatigue of body, or anxiety of mind, immoderate courses of mercury, excessive venery, improper use of vinous or spirituous liquors, an indigestible, irregular, or a very spare diet, sedentary employment, the giving of suck too long, and copi-

ous losses of blood;" since these sources of derangement are sufficiently obvious, and where the natural tendency is to a particular disease, they easily become exciting sources of such affection. On the subject of diet, however, we deem our author's remarks worthy especial regard, since they run counter to that starving creed, which has recently obtained, in our opinion, to an injurious extent. "Too spare or too poor a diet" (our author well observes) "often produces consequences not unlike to those of too full or too rich diet; and the pathologist will find, however seemingly inconsistent, that similar effects are perpetually flowing from opposite causes." And again; "It is notorious, that few become consumptive *in whom the tone of the constitution is maintained*. As a prophylactic measure, therefore, it is of great consequence to avoid too rich or too full a diet on the one hand, and too poor and scanty a diet on the other." If we allow that pulmonary consumption may grow out of too scanty a diet, we admit, *a fortiori*, that inflammation may proceed from this source; for genuine phthisis cannot have place without preliminary irritation of an actually inflammatory kind: and this being admitted, what becomes of that doctrine which maintains that all disorders of an irritative nature proceed from vascular plenitude? The early cramping and confinement which the manufacturing system imposes, is too obviously a wide-spreading source of serious evil to the rising generation; and it were well if the following hints of our author could be received as law among our manufacturing community. "Where necessity demands that children be sent to laborious or sedentary employment before the age of puberty, the work should be proportionate to the powers of the child, who ought to be allowed free exercise in the open air every day."

With respect to the changes which indicate the approach to phthisis, and thus serve as early diagnostic marks between this and other maladies, our author considers the condition of the skin as one of the principal criteria. The colour of the cheeks always becomes paler and more delicate than before, while that of the lips is often of a brighter red. The colour too comes and goes in a surprising manner: "a beautiful bloom will be spread for a moment over some parts of the cheeks,

and then receding, it will leave a remarkable pallidity, almost approaching to whiteness. Whenever this symptom is obvious, with a pulse somewhat quicker than natural, and a short tickling cough, phthisis may always be apprehended." The eye too is, as well as the skin, a striking index of incipient mischief, the tunica adnata becomes of a faint bluish white colour; and what has always appeared to us to be one of the most unequivocal signs of danger is, "the glassy or glistening appearance" which this organ assumes, together with the "expression of interest, and even of beauty, which is not unfrequently thrown over the whole countenance, most remarkable in persons whose face had been previously plain." When the tubercular inflammation establishes itself without any prior irritation of the digestive organs, the tongue is always red and clean, and from the first there is a tendency to hectic sweats. When this kind of irritation comes to be established, hope of recovery is a very frequent attendant upon the complaint; and it has been suggested, since this is not always the case, whether the opposite feeling to hope, which sometimes displays itself, may not have place when the disordered irritation has made its way into the lungs by first attacking the hepatic organ. There may be some truth in this remark, as a general proposition; but it certainly is the case, that at times any thing but hope is present in protracted cases of even genuine, simple, idiopathic phthisis.

We now come to the treatment of the several pulmonic affections above specified. In adverting to the remedies proper for chronic inflammation of the bronchia, Dr. Armstrong very justly compares the state as to its actual essence, and remedial requirements, with that of protracted hooping-cough; and recommends change of air as early as possible, provided the weather will permit it without risk to the patient. General bleeding to a copious extent is condemned in this complaint on account of the prevailing debility; but small general, or moderate local bleedings, are sometimes very useful, when followed by blisters near the site of the disease." An antiphlogistic regimen is advised; and where milk does not disagree with the stomach, it is said to constitute "the best article of diet, as it supports the strength without exciting the heart and arteries."

We were exceedingly happy to find Dr. Armstrong recommending in these pulmonic affections, a medicine which has long appeared to us to have fallen into unmerited decline, viz. the copaiba. To this medicine Dr. Armstrong professes himself extremely partial; and, indeed, we do not know whether in some other chronic maladies, afterwards alluded to, he does not carry his notion of its virtues beyond its actual deservings. But in application, at least, to the derangements now under notice, we feel assured that the practitioner, who has not hitherto included it in his list of remedies, will, upon trial of its effects, be obliged to Dr. Armstrong for thus calling his attention to its properties. "At first" (says our author) "it should be given intimately mixed with fine mucilage, in doses of about thirty or forty drops, three times a day, and gradually increased afterwards, until sixty, eighty, or more drops be taken at each time. When it acts as a strong purgative, Dr. Armstrong recommends a diminution of the dose; and as a cathartic in these cases, he prefers "castor oil and the Harrogate sulphureous waters." Copaiba, combined with sulphur, our author reminds us, was a favourite remedy of Morgagni in chronic complaints of the lungs: and he suggests, whether both these medicinals have not been too much neglected in coughs, by physicians of the present day. In this suggestion of Dr. Armstrong we cordially join; and we are disposed to think, that in reference to these, as well as several other medicines of a deobstruent nature, modern pathology and modern practice are rather too nice and sceptical. We are, perhaps, to attribute a great deal of present dislike to the idea of anti-obstruction, (so to express ourselves,) to the stimulating doctrines of the Edinburgh school, and to the party opposition which that school engaged in, against any thing that seemed at all to bear in favour of the humoral pathology. Dr. Armstrong insists upon the advantages promised by a regulated temperature in chronic affections of the bronchia; and he is inclined to think, that where the tar vapour has seemed to operate a cure of pulmonary consumption, the malady had been that now alluded to.

Our author still recommends the copaiba in ulcerations of the trachea, but he seems to imagine that these cases are more

commonly connected with a syphilitic taint than is usually supposed; and when that is the case (which will for the most part be rendered evident by concomitant symptoms, to be detected by investigation,) the cure is not to be effected without mercury. Mr. Bedingfield has suggested, whether in a case of simple ulcer, situated on the larynx, it might not be advisable to make an opening with the trachea or larynx, and apply such substances to the sore as might excite a healthy action, and from the successful event of the operation of laryngotomy, as detailed by Mr. Charles Bell, in his *Surgical Observations*, Dr. Armstrong considers, that in cases of extreme emergency, Mr. Bedingfield's suggestion might be acted on.

Inflammations of a chronic kind, in the pleura, may admit, according to our author, "in its first stage, before effusion has taken place in the thorax, one or two small or moderate bleedings from the arm. Afterwards, leeches and blisters should be applied repeatedly and reciprocally to the chest, in conjunction with daily diuretics, occasional laxatives, and an antiphlogistic regimen. If these measures prove unavailable, the mouth must be slightly affected by calomel, and the recently dried and powdered squill administered as soon as the ptyalism occurs, and gradually increased in quantity until it acts powerfully on the kidneys." It is quite necessary that the squill employed should be fresh; and it is, perhaps, principally from want of due attention to this particular, that we often in practice witness such a difference of apparent effect in this powerful medicine. When calomel is given under these circumstances, it ought, in general, to be given "in conjunction with small doses of opium, which allay irritation, and promote a determination of blood to the lungs." Its further combination, under these circumstances, with digitalis, has, in our practice, appeared to be abundantly serviceable; each ingredient in such composition seeming at once mutually to assist the virtues of the other, and to serve as an antidote against its injurious tendency. From the union of half a grain of digitalis with a quarter of a grain of calomel and opium given two or three times in the course of the four and twenty hours, we have often witnessed much benefit in several species of internal inflammation of a chronic and insidious nature. Our author mentions in this

part of his treatise, the advantage that may be obtained in pulmonary inflammations, by the too much disregarded expedient of "raising the upper poles of the patient's bed, by placing blocks of wood under them," or using an inclined plane, so that the patient's head and shoulders shall be constantly, and without trouble to himself, kept elevated above the line of his body. The same observations apply to chronic parenchymatous, as to pleuritic inflammation. Indeed, as before remarked, their existence is frequently simultaneous, and they cannot always be distinguished in practice.

Dr. A—— commences his particular remarks on the treatment of true consumption, by what we deem a most excellent and seasonable caution; namely, that the use of the lancet ought to be very warily had recourse to in these strumous habits and affections, lest, in our endeavours to subdue local inflammation, we "break up the general strength." "As I consider (he says) that phthisis is nothing more than scrofula of the lungs, it may easily be called into existence by too much depletion, like every other modification of scrofula." But as we consider the question of repeated venesection, in the first stages of pulmonary disorganization, to be a matter of prime importance, as it has appeared to us that practitioners have often, most unquestionably with the best intention, precipitated, rather than protracted the fatal event, by too freely emptying the blood-vessels under these circumstances; and, lastly, as the author before us is at once high authority, and expresses to the full our own feelings on the point at issue, we cannot refrain from extracting at length his sentiments on this head in his own words:—

"When called to any case which has the character of a threatened or of an incipient phthisis, the practitioner must minutely inquire into its real nature, that he may ascertain whether or not it be connected with any local irritation inside or outside of the chest, or with any depraved state of the general system. If such local irritation, or such depraved state of the general system, actually exist, the chance of recovery is the greater; for if either can be removed, by the means already intimated, the pectoral symptoms may disappear, provided they depend upon a sympathetic disorder of action, and not

upon derangement of structure. On the contrary, should the phthisical signs be unconnected with morbid conditions of this nature, perhaps the measures upon which most confidence is to be placed, in the present state of our knowledge, are those which act directly or indirectly on the skin: at least this is the result of my own observation. But it may first be naturally inquired, what is the power of blood-letting in the primary stages, as it is now becoming so favourite a remedy? Celsus advises venesection; Pringle does the same, and other authors of note, as well among the ancient as the modern; but I nevertheless suspect, that it will rarely of *itself* stop the approach or advancement of phthisis, except when chronic inflammation of the pleura, of the trachea, or of other parts, is operating as an excitant of the latter in habits hereditarily predisposed. In some cases of apparently genuine phthisis I have ordered repeated full bleedings from the beginning, until it would have been temerity to proceed further: yet the disease passed on, and the blood drawn, generally exhibited the buffy coat to the final operation. From this last mentioned circumstance some might contend, that the venesection should still have been boldly ventured on, as the blood so evidently showed inflammation. But in reply to this remark it may be urged, and justly too, that the buffy coat may be both occasioned and maintained by repeated abstractions of blood; for more or less re-action of the heart and arteries, by which the buffy coat is produced, always follows blood-letting, when carried beyond a certain point; and this is particularly the case in the irritable subjects of a phthisical tendency. Upon this principle, therefore, the very measure with which we so often subdue inflammation may be made the cause of producing it in certain persons, and in certain diseases; and however boldly and laudably we use it in intense inflammations or congestions, it requires a more deliberate and wary employment in complaints of a chronic character. Most certainly I have seen small or moderate bleedings of benefit in incipient phthisis, when followed by blistering; but wherever there is great constitutional delicacy, we must be cautious in even having recourse to them; and at all times when we determine on venesection in phthisis, we must endeavour so to regulate it as not to make it the occasion

of an increase of that re-action which it is designed to moderate. In the true tubercular phthisis, it is not a simple but a complicated irritation which most frequently exists in the lungs even in the commencement; an increased action of the capillaries, either producing or exciting tubercles, and the tubercles themselves re-acting upon and irritating those portions of the lungs in which they are imbedded. Very copious or very repeated venesection only tends to render the whole capillary system of vessels more irritable: from reason alone, therefore, one would conclude, that they could not be serviceable in phthisis; and my own experience fully bears me out in affirming, that this is actually the fact; small local or cautious general bleedings, so far as I have observed, are preferable to large ones: and the lancet is perhaps only admissible in the earlier periods of those cases attended with topical fulness, and a marked constitutional excitement. However undeniable it may be, that phthisis is an excitivè or an inflammatory disease, yet it seems probable, that the concomitant excitement or inflammation is of a specific nature: at all events, neither the one nor the other is within the common control of those agencies which so successfully impede the ordinary excitement and inflammation of febrile diseases. But as venesection is a measure of such great importance, and as men of approved talents have spoken favourably of its decisive use in an unmixed phthisis, it would ill become me to disregard their authority; and, therefore, it has been my wish simply to state the results of my own observation in regard to it, that the consideration of it may still remain open to fair inquiry."

It has already been stated, that Dr. Armstrong attaches extreme importance to the due regulation of cutaneous excretion as a remedial agent in incipient phthisis; and he considers the beneficial effects of sea voyages and a warm climate, to be mainly referable to this source, "the nausea, or sickness commonly attendant upon the first, and high and genial temperature of the last, alike determining the blood to the skin." Even in cases of hemoptoe it is said sea voyages will prove abundantly serviceable, although the sea sickness should amount to violent vomiting, and continue for a number of weeks. In further remarking on the importance of diverting

from the lungs to the skin, Dr. Armstrong again alludes to the principle of counter-irritants externally applied, and he seems to infer, that the benefits derived from the application even of leeches, as well as blisters to the surface, is, at least in part, attributable to the new action which these induce in the capillary vessels of the surface. To us there has always appeared one advantage, at least, which local detractions of blood by leeches insure above the more sudden discharges by cupping glasses; and that is, that the gradual way in which the vessels empty themselves, may prove more permanently operative, inasmuch as their diameters as gradually apply themselves to existing circumstances, and thus the local plethora, from re-action after blood-letting, is, in some measure, obviated. The tepid bath is extolled by Dr. Armstrong, still upon the same principle of determining to the surface; and it is conceived, that this "might actually relieve many cases of what are called passive hæmorrhages, by equalizing the circulation; for it not only brings a flow of blood from the arteries towards the surface, but it communicates an equal tone to the heart and arteries, thereby enabling them to resume their wonted offices." Respecting digitalis as an antiphthisical power, our author's opinions are not in any measure favourable to its efficacy. "The immediate relief," he says, "which it sometimes gives, by arresting the pulse, and by exciting nausea and diuresis, is, in general, completely counteracted by the constitutional shock and nervous irritation which it communicates; and as for its influence in a confirmed phthisis, however it may alleviate the cough for a time, it will always hasten death, by undermining the little strength which remains in the shattered system."

It was before mentioned, that our author recommended a nutritious diet, as a preventive of pulmonary consumption. "But what may prevent a disease, (he very judiciously remarks) often becomes improper when it has once been developed, and a milk and vegetable diet are advised in the first stages of the actual induction of the complaint." In the last stages, animal food and ale may be safely, and even advantageously given, when they do not appear to augment the cough and fever.

After proposing the establishment of a society, for the pur-

pose of further elucidating the nature and treatment of pulmonary consumption, Dr. Armstrong devotes the remainder of his pages to the consideration of the virtues of copaiba, to observations on the utility of waters containing sulphureted hydrogen in several chronic complaints, and to some general remarks on the rationale of chronic diseases.

We suspect a little too much of enthusiasm, and catholicism of attachment to the two remedies above mentioned: we are, however, fully convinced, although they may be rated rather too highly by our present author, that his hints respecting their utility deserve due consideration from every practitioner of medicine. We shall take another opportunity, probably, in the retrospect of the progress of our science, to resume the subject of these medicinals, and to enter more fully into the consideration of our ingenious author's physiological data and pathological principles; all of which, it is unnecessary to say, are marked by much ingenuity, but some of which appear to us to be of rather objectionable import. Here and there, too, there seems to be something like an assumption of originality in the propounding of doctrines, that, whether true or false, are not absolutely novel. *Sed hæc hactenus*. It would be highly grateful to our feelings always to close our criticisms with equally favourable sentiments towards the author criticised, as those with which we are impressed on the present occasion.

ORIGINAL PAPERS.

 FOR THE ECLECTIC REPERTORY.

Case of supposed Aneurism of the Right Carotid Artery. By
 SAMUEL POWEL GRIFFITTS, M. D.

IN the last week of the twelfth month, 1817, I visited E. H. an active woman, thirty-nine years of age. She had fallen on the ice some few days before, when her head chiefly, appeared to be injured. She now complained of head-ache and uneasy sensation of the breast. The jarring, aneurismatic beat of the pulse, led me to make more particular enquiry into her situation; and I perceived a tumor on the right carotid, which was traced as far as the clavicle, where I supposed it might be continued into the thorax; and had no doubt of its being an aneurism of the above mentioned artery. Doctors Chapman, Dorsey and Morgan, who saw it afterwards, at different periods, were of the same opinion.

There was but one course to pursue; a strict attention to rest, low diet, frequent bleedings, and purging with sulphate of magnesia; this plan afforded all the relief that could reasonably be expected.

Many distressing symptoms occurred; an almost constant thrilling noise in the head; severe pain in the breast and arms, particularly the right arm, a sense of pressure on the trachea, occasional fainting and dyspnœa; the appetite at one time much affected. Most of these symptoms were relieved by the use of the *spt. comp. æther. vitr. musk julep*, and *aqua ammoniæ*.

She continued in this way until the 20th of the eleventh month, 1818; when, about six o'clock in the morning, she was seized with severe pain in the chest, followed by very difficult respiration and vomiting; and, becoming gradually weaker, died without pain, about one o'clock.

Doctor Parrish's Account of the Appearances on Dissection.

On the 21st of 11th month, 1818, I examined a body for my friend, Doctor Samuel P. Griffiths, who was present: the subject was a female, supposed to have died with Aneurism of the right Carotid Artery.

I carefully dissected the muscles of the throat; and, after turning several aside, a tumor was brought into view, which I verily believed to be an aneurism of the carotid artery: I then opened the thorax; the cartilages were found ossified, and required the use of the saw.

I found a dropsy of the pericardium. On examining the great vessels about the heart, I thought the aorta had somewhat of a pouched appearance, that looked as if it might have been incipient aneurism. On tracing the vessels upward, I found the arteria innominata and subclavian perfectly natural. I now continued to divide the sheath of the carotid, and to trace it from below upward; and, what was my surprise, to find it also perfectly natural; it passed under the tumor, but was not in any way involved in it.

The question here naturally arises, whence was the tumor derived? I answer, it was the thyroid gland very considerably enlarged; it was elongated, and had obtained a situation directly over the carotid artery; the patient's neck was very short; the pulsation in the carotid was imparted to the tumor laying over it; and, I am informed, there was a strong resemblance to the aneurismal jarr or thrill. We are aware, that in dropsy of the chest and pericardium the heart often palpitates most violently; and this morbid pulsation may explain the throbbing of the carotid, which bore so strong a resemblance to aneurism.

Philadelphia, 12mo. 27, 1818.

The propriety of operating for aneurism had been suggested, to which I objected; as it was impossible to know the state of the artery below the clavicle. I had frequently endeavoured to remove, with my fingers, the tumor from the artery, wishing to think the disease was glandular, but could not succeed, as the tumour was so firmly fixed over the vessel, as not to be

moved from it; and the pulsation was such as to convey the idea that there was no intervening substance.

In my note to Doctor Parrish, requesting him to make the dissection, I find that I made use of the following expressions; "It is an interesting case of aneurism of the right carotid, at least, so said the symptoms;" still, I could call it nothing but aneurism, although I have long been accustomed to hesitate about the correspondence of symptoms with causes, especially where there is any thing like obscurity.

I regard the present as an instructive case. It appears to me that, in the living subject, it must, by the most experienced, have been judged to be an aneurism. Had the operation of passing a ligature on the arteria innominata, so successfully performed by Doctor Valentine Mott of New York, been, from any cause, resorted to in this case; if it had perfectly succeeded, the tumor would, indeed, have disappeared, or at least have been much diminished, because the thyroid gland would have been deprived of a large portion of blood, by the obliteration of the thyroid arteries, which come from the right carotid and right subclavian; but still no aneurism would have been removed, because none existed; and yet, such would have been the appearance, and such the conclusion. If the ligature had been passed on the right carotid, near to the aorta, which it would have been, if such operation had been performed, the above mentioned results would have partially taken place. It is because such a deception may occur, that I believe it right to record the present case, and hope it may prove a salutary warning to my medical brethren, and that they may be induced to act with caution in a disease of this description.

Philadelphia, 12th mo. 31st, 1818.

FOR THE ECLECTIC REPERTORY.

Two Experiments performed on Living Animals, to prove that the Circulation of the Blood, through the Lungs, is immediately and entirely suppressed during Expiration. By RICHARD HARLAN, M. D.

I HAVE been induced to offer you the two following experiments, with the hope that the original object of them may be considered of so much importance, as to induce some one, possessed of talent, industry and leisure sufficient, to institute a course of experiments; in order to throw some light on a subject of which, as yet, we are entirely ignorant.

I am perfectly aware that hypothesis, of whatsoever kind, ought not to be admitted into science without the most rigorous examination; and that doubt has a right to close the door of credence until the passport of demonstration is produced, sealed by nature or experiment.

For the accuracy of my experiments I can vouch; it is for others to judge of the correctness of my deductions.

The fact, that the arteries are empty, and the veins filled with blood after death (provided the death of the animal has not been sudden or violent, as from the effects of electricity, a blow on the stomach, the operation of certain gases, &c.) is well known to every one the least conversant in anatomy; but the *cause* of this phenomenon has hitherto escaped the attention of the anatomist; at least no satisfactory explanation has ever been offered. It was with a view to obtain some information on this subject, that I was encouraged to perform the operations I am now to relate; and although I was disappointed in the main object, other circumstances were brought into consideration during the experiment, equally interesting to the practical anatomist or speculative physiologist; and I flatter myself I have detected one error in physiology.

It was the opinion of many, and inculcated, for several years, in the lectures of our much lamented Professor of Anatomy, Doctor Wistar, that the circulation of the blood, through the lungs, was not prevented during expiration, or the collapsed state of those organs; and that death, in every

instance, was caused by the deteriorated or deoxygenated venous blood finding its way into the left cavities of the heart, and thence into the coronary arteries. If my experiments be correct this reasoning is certainly erroneous. It is true they differ widely in their results from those of Doctor Goodwin; but this subject was not immediately connected with the object of his experiments.

I am happy to state that, after having communicated my experiments to Dr. Wistar, he was induced to change, in part, his opinion. He informed me that, from Goodwin's experiments, he had been induced to believe the contrary for many years. Much interest was shown on his part; and, after frequent conversation with him on the subject, he was kind enough to urge me to pursue my experiments extensively and publish them; since which time various circumstances have prevented my giving the subject further attention; and I am induced now to make them public with the hope that some one, more capable, will institute a course of experiments to determine the problem yet to be solved; "why, after death, the arteries are empty and the veins filled with blood."

Experiment 1st.

Having secured a full grown healthy cat, in a horizontal position, I passed a ligature around the trachea, taking care that the lungs were in a state of expiration; I immediately opened the thorax, and exposed the heart to view; when the following appearances presented themselves. Both the auricles and ventricles contracted separately and naturally at first, but in less than five minutes the left auricle ceased; in fifteen minutes the left ventricle also; and in twenty minutes after the operation, neither could be again made to contract by any stimuli whatever. But the right auricle and ventricle continued their systole and diastole, incessantly, for fifty minutes; the consequence of which was, the right cavities, together with the two cavæ, became exceedingly distended; for, long previous to the left cavities having ceased to contract, not a single drop of blood entered the left auricle, which was very flaccid and empty. The circulation through the lungs, was, in this instance, entirely sus-

pended: hence we may remark, if the lungs did admit of as free circulation during expiration as during inspiration, why, in the fœtal state, does so small a portion of blood find its way through them?

I am unable to say why, in this experiment, the right cavities should continue their systole and diastole so much longer than the left; unless it is that they still continue to receive a portion of the *vis vitæ* from the blood, by which they were distended; as they are both, *cæteris paribus*, possessed of the same powers of life, being animated from the same source.

I now thought that the phenomenon in question was explained, by supposing the blood continued to circulate in the veins, whilst no more was propelled into the aorta and arterial canals; the latter were, of course, emptied. But I was soon convinced, that though the principal objection was obviated, the experiment did not explain in what manner that portion of blood, forced into the aorta by the last contraction of the left ventricle, found its way, independent of any *vis a tergo*, through the whole extent of the arterial canals to the mouths of the veins. This constitutes the problem to be solved; and it was of this, in particular, that Doctor Wistar asserted he had never heard any satisfactory explanation offered; although he had availed himself of frequent opportunities of conversing with men of science, upon the subject; some of whom argued, the pressure and action of the surrounding muscles as the cause; others the pressure of the external air; but he remarked "the elasticity of the coats of the arteries would resist any such pressure, and prevent the obliteration of their calibers."

On dissecting the heart, the left cavities were found nearly empty of blood; what remained was in consequence of their contractions being too feeble to force it out; the right cavities, on the contrary, were enormously distended; the lungs, when cut into, displayed a sanguineous, frothy appearance, similar to that observed in the lungs of drowned animals.

Experiment 2d.

Having procured another full grown healthy cat, in the presence of two medical gentlemen, I passed a ligature around the trachea, the lungs being in a state of expiration, and proceeded

to expose the heart to view; and here I had an opportunity of observing, that the pericardium is perfectly transparent, and, like the cornea of the eye, becomes dim only at the approach of death. In this experiment it was some time before we perceived I had not removed it, as it lay flaccid over the heart, whose motions were distinctly observed through that membrane.*

Although the *nature* of that principle, which animates the animal and vegetable kingdoms, may be too abstract for our investigation, yet its *effects* and its *laws* are of the utmost importance to the physiologist; and is a subject requiring our most serious consideration.

Deprive the animal structure, for an instant, of this unknown, imponderable, and invisible principle, we cannot but be struck with the great change that immediately supervenes, previous to decomposition; the adnata, over the cornea, becomes dim; the pericardium loses its transparency; the bladder permits the urine to percolate through its coats; the stomach and the gall bladder lose, in a great measure, their adhesive affinity, and allow their contents to transude the pores, and become effused upon the intestines; the muscular fibre cannot now resist nearly the same force as during life. Which demonstrate that there exists a vital or animal, as well as a *chemical* affinity in the living body; so different are living from dead membranes; and hence the fallacy of any experiment performed on dead parts, with a view to determine their action whilst in a living state.

I commenced operations at five minutes before nine o'clock, P. M. In less than five minutes after the trachea was tied the left auricle ceased to contract, as in the former experiment; in fifteen minutes the left ventricle ceased its contractions; and here the circulation through the lungs was suppressed. In twenty minutes the right ventricle ceased to contract, but the right auricle continued its systole and diastole, not only fifty minutes, as in the former experiment, but for *seven hours*, four of which it continued its contractions distinctly, and independently of any other external stimulus than the atmosphere to

* This experiment was made in the year 1816.

which it was exposed; whilst every other part of the body, the heart itself, except the right auricle, was cold, dry, and lifeless. The object of the experiment not being to determine the length of time the heart could contract after respiration, but to prove that the circulation through the lungs was not only interrupted, but altogether suppressed, during a state of complete expiration, it was discontinued. My assistants left me, at the end of an hour, to continue my observations alone; being perfectly satisfied, from the great distention of the right cavities, the regurgitation of the blood in the cavæ, the violent efforts of the right cavities, and the flaccid state of the left side of the heart, that no more blood had passed through the lungs.

I still, however, felt an inclination to see how long the contractile power would remain in the left auricle, and observed it attentively from nine P. M. until four in the morning; most of which time it contracted of itself, and was highly susceptible of external stimuli. On touching it with the point of the scalpel it contracted briskly; towards the latter part its contractions became less frequent, with intervals of some seconds, which intervals increased until one o'clock, A.M. after which it no longer contracted independent of external stimuli. On dissection, the left cavities were found flaccid and empty; whilst the right cavities, the two cavæ, with the pulmonary artery, were distended. The blood, in the right cavities, did not coagulate so long as the power of contraction remained. This engorgement of the right cavities would not have taken place did the lungs allow as free circulation, when compressed by expiration, as when expanded by inspiration; and that it does not depend on the want of power in the right auricle, to force it onward, is shown by instituting artificial respiration, which continues the circulation; also by the resuscitation of animals, which have remained a long time under water.

Conclusion.

From these experiments I infer, that death or asphyxia, from drowning or hanging, is not induced from the deteriorated or venous blood finding its way to the coronary arteries of the heart, nor from pressure on the brain, and loss of nervous energy solely, as it is of no importance whether the animal be

decapitated or not, provided artificial respiration be continued; the circulation goes on equally well for a time. But in every case of asphyxia there is a negation of oxygen, and consequent paralysis of the lungs; and the effect is the same, whether this negation proceed from the inhalation of mephitic air, from the exclusion of all gas, as in drowning, hanging, tying of the trachea, or from interrupting the nervous spirit, by passing a ligature around the eighth pair of nerves; they all induce a paralysis* of the lungs, and a consequent suspension of their action. This paralysis is, therefore, in every instance, the *immediate* cause of death; whether it proceed from the simple negation of oxygen, or destruction of nervous energy; the one may produce or occasion the other. For although by inflating the lungs after decapitation, the circulation may be made to continue, it does so no longer than the right cavities of the heart possess a power of contraction sufficient to propel the blood through the expanded lungs; and until the vital energy of these organs is expended; which must soon happen. For no sooner does the paralysis of the lungs take place, than that power, by which the life of animals is produced and continued, and which I suppose to be derived from the atmosphere, is put a stop to, and the blood, which animates all the solids, no longer receiving its supply, death, or the total extinction of the vital principle, is the consequence. On the other hand, if the lungs be left in a state of expiration, the circulation is immediately suppressed; as in this instance, besides the paralysis, the air cells, with the extremities of the arteries and veins, are compressed.

It will be recollected, that the length of time, for which the hearts of the animals dissected continued their contractile power, differed widely; the one fifty minutes, the other seven hours. And as it is impossible to determine what length of time the human heart may retain its *vis insita*, after every other phenomenon of life may have ceased, from asphyxia; we should be encouraged to attempt resuscitation in cases otherwise desperate.

The frothy, sanguineous appearance, noticed in dissecting the lungs of the animals which were the subject of these experi-

* By paralysis of the lungs I mean a suspension of their vital action.

ments, has, by some authors, in their dissections of drowned persons, been mistaken for the water which they supposed to have passed into the lungs; but it is not peculiar to the lungs of drowned animals. It may be observed, more or less, in death from all kinds of asphyxia; it is occasioned by the halitus, or vapour, which escapes from the exhalants, not being carried off by the function of respiration, being condensed and collected in the cells.

As the deteriorated or venous blood never reaches the left side of the heart in these cases, it cannot occasion those morbid effects upon the brain, so frequently spoken of by Bichat and other writers. Admitting that venous blood was propelled into the left cavities, I believe it would not produce its deleterious effects so immediately as is generally supposed; as, in those cases of infants, and, perhaps, of pearl divers, where the communication of the two auricles is continued by the *foramen ovale*, and by which a mixture of venous, with arterial blood in the left ventricle, is produced, death is by no means the immediate consequence.

The passage of water, into the lungs, has no share whatever in inducing death from submersion. I filled the lungs of a cat by injecting water into the trachea; it threw her into convulsions, and the water was immediately expelled. Those parts about the glottis are so exceedingly irritable that, whilst life remained, no water could pass into the trachea; and, in fact, it is not to be found in dissections after death, until putrefaction has taken place.

As the heart is the last muscle which loses its power of contraction, and as the circulation *cannot* be continued, whilst the lungs are compressed; the first indication in our attempts to resuscitate should be, 1. Mechanical inflation of the lungs; 2. To restore the temperature of the body by the warm bath, friction, &c. 3. Stimuli, external and internal; as enemata of brandy, &c. 4. To evacuate the contents of the stomach.

December 30th, 1818.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

VACCINATION IN INDIA.

The Board of the National Vaccine Establishment have lately received from Seringapatam, a curious and important Memoir on Vaccination in that part of India, by the Rev. J. A. Dubois, Missionary in the Mysore, author of a description of the Character, &c. of the People of India, and long a most ardent and zealous promoter of the Vaccine. The following short abstract of this communication cannot but be interesting to the public:—

M. Dubois states, that vaccination was introduced into Hindostan in the year 1802, and warmly encouraged by the British government.

The natives, however, displayed a violent aversion to it for several causes.

The first proceeded from a hatred to all innovations.

2dly. A rumour arose, that this was a design of the English to affix an indelible mark on certain persons: and that all males so impressed were, when they grew up, to be forced into the military service, and the females to be concubines.

3dly. The Hindoos had always considered the small-pox as a dispensation from a goddess named Mahry Umma; or rather that the disease was an incarnation of this deity into the person infected. They endeavoured to propitiate this goddess with offerings and sacrifices; but should the patient die, the relatives dare not weep, lest the goddess should overwhelm them with greater calamities.

From these causes vaccination was at first only submitted to by Christians.

Dr. Alex. Anderson, Superintendent Surgeon of the Mysore country, thought proper, with the approbation of the Supreme Council at Madras, to engage the Rev. M. Dubois to exert his influence to overcome the prejudices of the natives.

He accordingly drew up several tracts in the Indian language, and he set out upon a tour to disseminate the Vaccine. Several Indian Christians were selected, and instructed to aid him in his labours.

At first much confusion arose; and several failures occurred by practitioners who had mistaken a spurious disease for the true Vaccine. But this opposition gradually declined, in consequence of the complete success which attended the regular Vaccine. And the natives became persuaded that the goddess Mahry had chosen this mild mode of manifesting herself to her votaries, and might be meritoriously worshipped under this new shape.

M. Dubois solemnly declares, that he and his assistants have vaccinated nearly *one hundred thousand* persons; and that he has not heard of one case proving fatal, *nor a single well authenticated instance, among this large number of the small-pox, occurring after the regular vaccine.*

He mentions, that the vesicles are apt to be broken by the coarse blanket dress which is frequently worn: and the friction often produces an ulcer. These cases were re-vaccinated; but he observes a singularity, that this second operation rarely takes effect, if performed sooner than two or three months after the first.

A circumstance of a very agreeable nature is also noticed—that the vaccine frequently puts a stop to the intermittent fever, which is prevalent in that country. M. Dubois asserts, that he knew instances of its curing quartan fevers, which had continued four or five years.

He compliments highly the Government in India for the measures adopted to extend vaccination; he mentions that Native Vaccinators are appointed in every district, under the superintendence of English medical gentlemen, with liberal salaries; from which he indulges the reasonable expectation, that at no remote period the small-pox will be entirely exterminated in that country; where, in former times, before the introduction of this wonderful preservative, whole districts have been occasionally almost depopulated by the ravages of the small-pox.

This communication of M. Dubois is accompanied by ac-

curate tables, setting forth the several casts and numbers in each province who have undergone vaccination at his hands, making an aggregate of 98,734 persons.—*Lond. Times*, Sept. 18, 1818.

New Vegetable Alkali.

M. M. Pelletier and Caventou have inserted the following note in the *Annales de Chimie* for July. (The note was read to the Academy 10th August).

Whilst analysing the Vomica Nut, and the Bean of St. Ignace, we extracted from these two seeds the substance to which they owe their action on the animal economy.

This substance is white, crystalline, and very bitter. It crystallizes in the form of quadrangular plates, or in four sided prisms, terminated by an obtuse quadrangular pyramid. It is very slightly soluble in water, but very soluble in alcohol. It is formed like most vegetable substances, of oxygen, hydrogen, and charcoal. It is most distinguished by its alkaline properties; and though like morphia, is essentially different from it. It restores a reddened blue colour, and with acids forms neutral salts, soluble in water, and crystallizable. With weak nitric acid it forms a nitrate, but the concentrated acid acts on and decomposes it; and forms a solution, at first red, but becoming yellow, and yielding oxalic acid. Its acetate is very soluble, the sulphate less so, and crystallizable in rhomboidal plates.

This substance acts on animals in a similar manner to the alcoholic infusion of the nux vomica, but more energetically.

The class of acid vegetable substances is numerous; on the contrary, that of alkaline vegetable substances is confined to morphia. Nevertheless M. Vauquelin has noticed the alkaline properties of a substance obtained by him whilst analysing the *daphne alpina*. The new body will form a another genus in the class, which may become numerous, and which has first been observed by M. Vauquelin. To recal these facts, and designate our substances by a name which will enable us to avoid periphrases, we propose to call it *Vauqueline*. This

name is better than one entirely insignificant, or that indicates properties which may be found in other bodies.—*Journal of Science and the Arts*, Oct. 1818.

Analysis of the Chenopodium Olidum. By MM. Chevalier and Lasseigne.*

We are informed by these chemists that the analysis of this plant offers some very remarkable results, of which the most singular is that it contains a quantity of uncombined ammonia. This is supposed to be the vehicle of the remarkably nauseous odour which it exhales, strongly resembling that of putrid fish.

When the plant is bruised with water, the liquor expressed, and afterwards distilled, we procure a fluid which contains the subcarbonate of ammonia and an oily matter, which gives the fluid a milky appearance. If the expressed juice of the chenopodium be evaporated to the consistence of an extract, it is found to be alkaline; there seems to be acetic acid in it, while its basis is said to be of an albuminous nature. It is stated also to contain a small quantity of the substance which the French call osmazome, a small quantity of an aromatic resin, and a bitter matter soluble both in alcohol and in water, as well as several saline bodies. The following is stated as the result of the analysis, which, however, we may remark, is so complicated and so peculiar, that we should be glad to see it confirmed by further experiments.

The various constituents of the chenopodium olidum are as follows:

1. Subcarbonate of ammonia.
2. Albumen.
3. Osmazome.
4. An aromatic resin.
5. A bitter matter.
6. Nitrate of potash in large quantity.
7. Acetate and phosphate of potash.
8. Tartrate of potash.

* Abridged from Journ. Pharm. iii. (Sept. 1817.)

It is said that 100 pounds of the dried plant produce 18 pounds of ashes, of which $5\frac{1}{2}$ are potash.—*Annals of Philosophy*, Sept. 1818.

On the new metal Cadmium; by M. Gay Lussac.

The new metal resembles tin in its colour, its softness, its ductility, and the sound which it produces when it is bent. It melts and volatilizes at a temperature a little lower than zinc. It preserves its splendour in the air; but by heat it is changed into an orange yellow oxide, which is not volatile, and which is very easily reduced. This oxide does not colour borax; it dissolves very readily in acids, and forms colourless salts, from which it is precipitated white by alkalis. The hydrosulphuric acid precipitates it yellow, like arsenic. Zinc precipitates it in the metallic state. Its specific gravity at 77° (F.) is 8.635.

The metal was discovered in the autumn of the last year, by M. Stromeyer, while he was officially examining the apothecaries' shops at Hanover. M. Hermann, who prepares this oxide on the great scale for medicinal purposes, having been prohibited from selling it, because the presence of arsenic had been supposed to have been detected in it, particularly examined it, and perceived that it contained a new body, which he procured in a separate state, and sent to M. Stromeyer, begging him to verify his conjectures. M. Stromeyer soon found that it had the same properties with the metal which he had just discovered, to which he gives the name of Cadmium.—*Ann. de Chimie et de Phys.*

Letter from Sir Everard Home, Bart. to Mr. Brande, on the Use of Colchicum.

[From the Journal of Science and the Arts, for October, 1818.]

MY DEAR SIR,

IN the communications which I made to the Royal Society, upon the use of the Vinum Colchici in gout, in the year 1817, I was desirous of putting an end to the quackery respecting that medicine, and to restore it to the place it held in the phar-

macopœia in the time of the Greek physicians; at the same time that I explained an improvement in its preparation, from which I have myself received so much benefit, that I was desirous of giving my fellow sufferers an opportunity of partaking of it.

The Philosophical Transactions being a work set aside for investigations, and recording new facts, not for practical essays, I contented myself with stating what was new, leaving to the practitioners in medicine to put my observations to the test, and diffuse the benefits of this mode of employing the medicine.

I am now induced, by the numerous applications that are made to me for further information on the subject, to send the following observations to you, with a request that you will give them a place in the Journal of the Royal Institution, by which means they will be more generally diffused than through the medium of the Philosophical Transactions.

It is not now necessary to discuss the point, whether there is any difference between Husson's and Wilson's gout medicines and the Vinum Colchici, since they all three cure the gout nearly in the same dose, and the same period of time; proofs of their identity sufficient for any practical purpose.

The facts on which I wish to lay particular stress are the following:

1st. That the Vinum Colchici, when received into the circulation in small doses, produces no deleterious effects, and only brings on the same symptoms as when taken into the stomach, which go off in similar periods of time.

2d. That the deposit which is separated from the infusion by keeping, when given by itself in the dose of a few grains, produces inflammation and ulceration on the coats of the stomach and intestines.

3d. That the infusion removes the paroxysm of gout equally readily, whether given without the deposit, as with it.

4th. The infusion, when clear of the deposit, can be taken in doses of sixty or seventy minims, without producing any disturbance in the stomach, increasing any of the secretions, or bringing on an irregularity of the pulse, effects which commonly occur when that dose is given with the deposit mixed with it.

5th. That sixty minims is the smallest dose that can be depended upon for the complete removal of a paroxysm of gout.

These are the facts which I communicated to the Royal Society, and which are confirmed by an experience of seventeen months upon myself and many other individuals. In some constitutions, a dose of seventy minims may be required, and that dose I know can be taken with safety, as I have taken it myself, and found no sensible effect from it, further than a slight nausea, and that the attack of gout was carried off.

The advantage of taking the Colchicum in this form is, that being milder, the dose necessary for the cure can always be employed without injury to the stomach, even in states of the greatest debility. After an illness, by which I was reduced to so great a degree of weakness as to be unable to walk alone, the gout came violently in my left foot; sixty minims of the Vinum Colchici completely removed it in twenty-four hours, without any disturbance being produced in the stomach, or any other distress whatever. The consequences of a violent fit of the gout under such circumstances, had it been allowed to go on, are not to be calculated.

As sixty minims of Husson's and Wilson's medicine too often produce purging to a violent degree, in all such cases it must be given in reduced doses; and as a smaller does not produce a cure, unless repeated; the stomach, by such repetition, is not only more disturbed, but kept a longer time in that state, and the disease not so effectually removed; and it is known, that in all constitutions liable to gout, whatever deranges the stomach, tends to bring on the paroxysm.

The Vinum Colchici, without the deposit, has another advantage, for as it does not irritate the stomach, it does not require being compounded with other medicines, to defend the stomach from its effects, so that the patient can measure out the dose for himself, which he will take more pains to do accurately, than any other person; and here great accuracy is necessary.

The bulbs of the Colchicum should be collected after the disappearance of the leaves, which happen in July, and before the appearance of the flower, early in September.

EVERARD HOME.

Gas from Turf.

It has been proposed in Holland to substitute turf for coal, as a material, from which to obtain a gas for illumination. The experiments that have been made promise much success; and the apparatus required may be of far simpler construction than those used in the distillation of coal. The products do not require that careful and elaborate process of purification which is necessary for the gas from coal. It is said also, that the light is better. The light may be better, than that from coal gas, badly made, or carelessly used; but it is not likely that, with equal precautions, the first should surpass, or even equal the latter.—*Journal of Science and the Arts*, Oct. 1818.

Pathology of Phthisis; and the Influence of Climate over its Developement. From the French of BROUSSAIS.

M. Bayle divides Phthisis into the tuberculous, calculous, cancerous, and ulcerous; almost all of which species, however, have the tubercle as the basis of the disease. I have observed, and dissected as many cases of this disease as M. Bayle, and have thence come to nearly similar results. I have only met with a single case of ulcerated lungs unaccompanied by tubercles, or some analogous disease of the lymphatic or cellular structure of the organ. Now it is on the tuberculous degeneration that the physician ought particularly to fix his attention. My researches have led me to conclude, that tubercles in the lungs are the result of, and developed by *irritation* in the sanguiferous capillaries of that organ; which irritation is greatly influenced by climate, as the following facts will show.

In 1804, I joined the army of Holland, and there found phthisis so prevalent that, whenever a common catarrh came to be protracted among people of fair complexion and lymphatic temperament, phthisis was the termination. I opened every one who died of the disease, and invariably found tubercles or analogous granulations in the lungs. From this circumstance I was led to infer, that had these unfortunate men remained in their native climates, the greater number of them would have escaped that pulmonic irritation and inflammation which de-

veloped tubercles, and ultimately induced phthisis. This inference was fully realized soon afterwards. The army was marched to Italy, where pulmonary diseases and phthisis almost entirely disappeared; and what is remarkable, the same classes of soldiers who were every day dying of phthisis in Holland, presented, when dead of any other disease in Italy, not a trace of tuberculous degeneration in the lungs. This sufficiently proves, that a cold, moist, and variable climate not only tends to drive the tubercles into suppuration, when once formed; but, by keeping up irritation in the respiratory apparatus, actually has the power of producing the tubercles themselves.—*Medico-Chirurgical Journal*, Oct. 1818.

Taliacotian Art.

Mr. A. Copland Hutchinson, late Surgeon of the Royal Hospital, Deal, and a zealous, able, and active cultivator of operative and medical surgery, has lately performed the nasal operation, according to the plan recommended by Mr. Carpue, and with success. The patient, a female, had lost every part of the nose, even the nasal bones, about eight years ago, from gangrene succeeding an attack of erysipelas. It was not necessary to tie any blood-vessel. On the second day a slight hæmorrhage occurred from the internal surface of the new nose. On the eleventh day from the operation there was external hæmorrhage, to the amount of thirty-three ounces from the right angular artery, but which stopt spontaneously. The blood issued from the very part whence the stitch had been removed, and must have been caused by the ulceration of the coats of the vessel.—*Medico-Chirurgical Journal*, Oct. 1818.

Brief Account of the Imperial Society of Naturalists, at Moscow. By Dr. LYALL, Physician to the Countess Orloff-Tchesminsky.

The plan for forming a dépôt for the discoveries in natural history, in the vast empire of Russia, and uniting the friends of this science who wished to lend their assistance for that

purpose, and of publishing in Russia the history of the discoveries made in the empire, was conceived by Professor Gotthelf Fischer, on his arrival at Petersburg, in the year 1804. It was not till the summer of 1805, however, that a few of the professors of the University of Moscow, and of the literati first assembled, and adopted the regulations proposed by Professor Fischer.

The object of the Society is to occupy itself with natural history, and the relative sciences,—as human and comparative anatomy, chemistry, natural philosophy, rural economy, &c.&c.

The Society consists of members *ordinary* and *honorary*. The ordinary members are divided into *resident* and *non-resident*. Shortly after the association above mentioned took place, his Excellency, the late Mr. Mouraviof, curator of the University, and colleague of the Minister of Public Instruction, being informed that the Society had begun to meet at the house of the director, Professor Fischer, presented its regulations to his Imperial Majesty, the Emperor Alexander, who approved of the plan, and therefore ordered Mr. Mouraviof to testify his satisfaction and approbation to the Professor.

Soon after the institution of the Society, the literati, and particularly the cultivators of natural history, including many of the nobility in Petersburg and Moscow, and in the other towns and universities in Russia, many of the most distinguished philosophers and naturalists on the continent, chiefly through the extensive acquaintance of the founder and director, were enrolled among its members. Presents were received from all quarters, of books, objects of natural history, and money. The Society was very flourishing; and, by the year 1812, had published four volumes of its Transactions in different languages. All the collections of the Society were deposited in the museum of the University, and, along with that extensive collection, became a common prey to the flames in the memorable year 1812. Among other things were lost some manuscripts, and almost the whole of the impression of the four volumes of the Transactions, and also the second edition of the first volume. Far from being dispirited by this irreparable misfortune, (particularly to Professor Fischer, who had arranged and published a Catalogue, in three volumes, of the

Museum Demidof, and two volumes of the Imperial Museum, now united,) he and the other members re-assembled in 1813, began their proceedings, and since that period have continued all their efforts with unremitting vigour to recover from their losses. The Society has again collected a small museum, which has been considerably augmented this winter; as well as the library, consisting of above 300 volumes. (The library of the University is restored to the amount of 7000 volumes.)

The Society unites here a number of men of great, and others of considerable talents, whose works are too little known in Great Britain. From the change in the state of Europe, however, a more free interchange of scientific publications is to be wished for, and may be expected. The Society intends very soon to reprint the four volumes of its Transactions; and in the mean time the fifth volume is in the press, which forms the first of a new collection. The whole of these volumes are replete with matter important to the natural historian and philosopher.

The number of the Society's honorary and non-resident ordinary members is very great, and includes the most distinguished characters in Europe and America, &c.

The Imperial Society of Naturalists is well known on the continent, and is desirous of becoming better known also in Great Britain, by an interchange of its Transactions for the Transactions of the Natural History and Literary Societies of our island, as well as to receive the donations of objects of natural history, or of books, from its members, or from individuals disposed to assist its views.

Societies wishing to make an exchange of Transactions may address themselves as follows:—"To Professor Gotthelf Fischer, at Moscow." Or, if they will send a copy of their Transactions, they may rely with perfect confidence that Professor Fischer will return in their place the works of the Imperial Society of Naturalists.—*Lond. Med. and Phys. Journ.* Sept. 1818.

OBITUARY.

Died, November 12th, 1818, Doctor JOHN S. DORSEY, Professor of Anatomy in the University of Pennsylvania, in the thirty-fifth year of his age.

DISPENSARIES.

By the statements published, it appears that these institutions have had under their care the number of patients which follows.

PHILADELPHIA DISPENSARY.

From December 1, 1817, to December 1, 1818,	2905
Of these the number Cured is, - - -	2570
Relieved, - - -	120
Dead, - - -	76
Irregular or uncertain, -	41
Removed, - - -	62
Remaining under care, -	36—2905

NORTHERN DISPENSARY.

From December 1, 1817, to December 1, 1818,	819
Of these the number Cured is, - - -	648
Relieved, - - -	56
Dead, - - -	65
Removed, - - -	21
Irregular, - - -	20
Remaining under care, -	14 —819

SOUTHERN DISPENSARY.

From December 1, 1817, to December 1, 1818,	2156
Of these the number Cured is, - - -	1951
Relieved, - - -	101
Dead, - - -	54
Removed, - - -	31
Irregular or uncertain,	7
Remaining under care,	12—2156
Making a total of five thousand eight hundred and eighty patients.	

**VACCINE SOCIETY.**

The Physicians of the Society have successfully vaccinated five hundred and eighty-one persons during the last year; their operations being confined to the Northern Liberties and Southwark, since the Councils have undertaken to provide for the vaccination of the poor of the City.

METEOROLOGICAL OBSERVATIONS.

State of the weather at Philadelphia during the last six months of 1818.

July.

Thermometer—Lowest at 8, A. M. 71—3d of the month,
 Highest at 3, P. M. 97—12th do.
 Mean, 79

Winds variable—mostly north west and south east—forepart of the month dry—heavy rains the latter part. Heat considerable through the month. Several deaths from the heat and drinking cold water—Ice islands met with, on the 12th, in latitude 45 deg. 10 min.—Cholera infantum prevalent, chiefly among the poor. The city hospital, at some distance from the northern extremity of the city, was taken for the reception of the children of the poor, labouring under summer complaints; and supported by an association chiefly composed of females.

August.

Thermometer—Lowest at 8, A. M. 65—18th day of the
 month,
 Highest at 3, P. M. 86—1st do.
 Mean 70

Winds—From north and south east to north and south west—Little rain—Little thunder and lightning this summer—A very dry season—The fruits of the earth have been abundant—Crops of wheat, rye and oats, good—Indian corn remarkably good—All kinds of vegetables excellent—Few cherries this year—Apples moderately good—Peaches, melons, &c. abundant.

September.

Thermometer—Lowest at 8, A. M. 50—29th day of the
 month,
 Highest at 3, P. M. 82—15th do.
 Mean, 65

Winds—north and south westerly for the most part—Clear weather—But little rain—Very heavy gale at sea on the 27th—A warm month.

October.

Thermometer—Lowest at 8, A. M. 40—29th day of the month,

Highest at 3, P. M. 73—15th do.

Mean, 65

Winds—Chiefly westerly—Little rain.

November.

Thermometer—Lowest at 8, A. M. 36—20th day of the month,

Highest at 3, P. M. 65—6th do.

Mean, 50

Winds—Much southerly and westerly—Not much rain.

December.

Thermometer—Lowest at 8, A. M. 17—19th day of the month,

Highest at 3, P. M. 52—5th do.

Mean, 30

Winds—North westerly—Snow light on the 2d, also on the 11th and the 18th—Rain the last of the month—A very severe storm of rain and wind on the 6th—Varicella has been common—Small pox, of latter months, scarcely heard of, though varicella has often been mistaken for it—Mild cases of scarlatina continue—Protracted cases of autumnal remittent have been common—Some cases of typhoid pneumonia, which required high cordial treatment—Hospital or jail fever prevalent in situations where many were necessarily placed together—The salutary laws, passed by our legislature to prevent the importation of Europeans in crowded ships, has, probably, prevented further introduction of the disease from that source—No account of any epidemic throughout the United States.

AMERICAN PHILOSOPHICAL SOCIETY.

Officers elected, January 1st, 1819:

President. Robert Patterson.

Vice Presidents. William Tilghman, Peter Stephen Duponceau, Zaccheus Collins.

Secretaries. Thomas C. James, Robert M. Patterson, William P. C. Barton, Robert Walsh, Jun.

Counsellors for three years. William Rawle, Horace Binney, John Sergeant, John Quincy Adams.

Curators. Joseph Cloud, Thomas T. Hewson, Reuben Haines.

Treasurer. John Vaughan.

LIST OF RECENT MEDICAL PUBLICATIONS.

Pharmacopœia in usum Nosocomii a Thoma Guy, Armigero, A. D. 1721, fundati, 18mo.

Pharmacopœia Nosocomii Regalis Sancti Thomæ Londinensis.

Observations on the Treatment of Epiphora or Watery Eye, and on the Fistula Lachrymalis; together with Remarks on the Male Catheter, and on the Treatment of Hæmorrhoids. A new edition. To which are added, Observations on the near and distant Sight of different Persons; on the Muscæ volitantes of Nervous persons; and on the Staphyloma, Hydrophthalmia, and Carcinoma of the Eye. By the late James Ware, F. R. S. Edited by his Son, Martin Ware, 8vo.

Report of the Committee of the London Infirmary for curing Diseases of the Eye, occasioned by the Statements contained in a Letter, addressed by Sir William Adams, to the Governors of Greenwich Hospital, 8vo.

Reply to the same, by Sir William Adams, 8vo.

Observations on the properties of the Air Pump Vapour Bath, pointing out their efficacy in the cure of Gout, &c. &c. By M. La Baume, 8vo.

Observations, proving that Dr. Wilson's Tincture for the cure of Gout and Rheumatism is similar, in its nature and effects, to the deleterious preparation, the Eau Medicinale. By W. Henry Williams, M. D. F. L. S. 4to.

The Art of preserving the Feet; or practical Illustrations for the prevention and cure of Corns, Bunnions, &c. By an experienced Chiropodist, 8vo.

An Address to British Females, on the moral management of Pregnancy and Labour. By William Cooke, Surgeon Accoucheur, 8vo.

The Hunterian Oration, delivered before the Royal College of Surgeons, on Saturday Feb. 14, 1818, and published at their request. By Sir David Dundas, Bart. one of the Governors of the College, 4to.

Observations on Stridulous affections of the Bowels, and on some varieties of Spinal Disease: with an appendix of cases. By J. Bradley, M. D. 8vo.

A Succinct Account of the contagious Fever of this Country, as exemplified in the Epidemic now prevailing in London; with the appropriate method of Treatment, as practised in the House of Recovery. By Thomas Bateman, M. D. 8vo.

Surgical Essays. By Astley Cooper, F. R. S. Surgeon to Guy's Hospital; and Benjamin Travers, F. R. S. Surgeon to St. Thomas's Hospital. Part I. 8vo. with Plates.

Elements of Anatomy, designed for the use of Students in the Fine Arts. By James Birch Sharpe, Member of the Royal College of Surgeons, and Student in the Royal Academy. With Plates, royal 8vo.

A Manual of Practical Anatomy, for the use of Students engaged in dissections. By Edward Stanley, Assistant Surgeon, and Demonstrator of Anatomy at St. Bartholomew's Hospital, 1 vol. 12mo.

Inquiry into the Influence of Situation on Pulmonary Consumption, and on the Duration of Life; Illustrated by Statistical Reports. By John G. Mansford, Member of the Royal College of Surgeons, London, 8vo.

Johnson on Gout, 8vo.

Johnson on the Influence of Civic Life, &c. and on the Human Health, 8vo.

Reports of the practice in the Clinical Wards of the Royal Infirmary, Edinburgh; November and December, 1817; January, 1818; May, June, July, 1818. By Andrew Duncan, Jun. M. D. F. R. S. E. &c. &c.

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No. II.

SELECTED PAPERS.

Experiments on the Transfusion of Blood by the Syringe. By
JAMES BLUNDELL, M. D. Lecturer on Physiology at
Guy's Hospital.

[From the Medico-Chirurgical Transactions. Volume IX.—Part I.]

A FEW months ago I was requested to visit a woman who was sinking under uterine hemorrhagy. The discharge had stopped before my arrival, but her fate was decided, and notwithstanding every exertion of the medical attendants, she died in the course of two hours.

Reflecting afterwards on this melancholy scene, for there were circumstances which gave it a peculiar interest, I could not forbear considering, that the patient might very probably have been saved by transfusion; and that, although there was little opportunity for operating in the usual manner, the vessels might have been replenished by means of the syringe with facility and promptitude. As it seemed doubtful, however, whether the blood would remain fit for the animal functions after its passage through the instrument, the following experiments were instituted with a view to ascertain the point; and they are now submitted, with all their imperfections, to the consideration of the society; under the hope, that they may

contribute a little to excite the attention of the medical philosopher, and recommend a neglected operation to the experimental investigation which it seems to deserve.

The femoral* vessels of the dog were laid bare *at the groin*; and a pipe, sufficiently large to fill the artery, was introduced with its extremity toward the heart. On removing the ligature, which had been thrown around the vessel to prevent a premature discharge, the blood rushed out with such impetuosity, that eight ounces escaped in the course of two minutes, and the discharge soon afterwards ceased. From this discharge of blood, the most alarming symptoms arose; distress and gasping, struggling and convulsions, and at length a profound fainting, marked by stoppage of the circulation, by insensibility, and by a complete relaxation of the abdominal muscles.

In this condition the animal was suffered to lie for a few seconds, when six ounces of blood, taken from the artery of another dog, were injected into the femoral vein, in a manner which will be hereafter described. In consequence of this operation, it soon revived; the abdominal muscles became firm, and the respiration regular, sensibility was restored, and the blood again circulated, indeed so briskly, that it pushed away the concretion which had formed in the femoral tube, and rushed out. So sudden and complete was the resuscitation, that the animal seemed rather to awake from sleep, than arise from apparent death.

To give this experiment (which will be found in the annexed register, together with various repetitions,) all its force, it may be proper to observe, that the combination of symptoms just enumerated is mortal, and that whatever the symptoms be, the dog invariably dies, when left to its natural resources, if the blood is suffered, as in this instance, to flow from the femoral tube, until the discharge spontaneously ceases. Transfusion alone can save it.

From facts like these it is evident, that the transmission of blood through the syringe, does not unfit it for the animal purposes; but as this is a principle, which lies at the bottom

* Register, Experiment 2.

of the whole operation, it may be proper to confirm it by the following experiments.

The femoral* vessels of the dog were laid bare as before; and a pipe was introduced into the artery and vein. Then, by means of the syringe, which will be hereafter described, the blood which was suffered to flow into a cup from the artery, was directly returned into the vein; and this operation was continued, not for a few seconds only, but for twenty-four minutes. Yet the dog sustained but little injury.

It should be observed here, that if the blood be suffered to flow in a full stream from the femoral artery of a dog below the middle size, about half a pint will be discharged in the course of two minutes; but as this operation was carried on for twenty-four, and the artery gave off its blood impetuously during the whole time, it follows, that twelve pints of blood must have entered the cup, and been transmitted by the syringe to the veins. The whole weight of the dog, however, did not equal twelve pounds, and hence it is obvious, that the same blood must have passed the syringe repeatedly; a conclusion which is confirmed by the highly arterial characteristics, which the blood had acquired, when the operation terminated. This experiment will be found, together with repetitions, in the appendix; and proves, like the former, perhaps in a still more impressive manner, that blood may be transmitted through the syringe, and this too repeatedly, without becoming unfit for the purposes of life.

From this principle it may be inferred, that the transfusion of human blood by the syringe to the veins of a human subject, may be attended with the most important advantages; but as accidents may occur in attempting the operation, it is necessary to ascertain how far they will affect its success.

Although the blood sustains but little injury when discharged into the cup and promptly transferred to the veins, it seems to suffer in some way or other if the transfusion be delayed.

A dog† was drained by the femoral artery, and replenished by the vein; but in performing this experiment, the human blood was injected instead of the canine, and it was suffered

* Register, Experiment 6.

† Register, Experiment 8.

to be in the cup between fifty and sixty seconds before it was thrown in. The animal expired on the table. At first indeed it revived, the blood circulated, the respiration was renewed, and sensibility was restored; but these flattering symptoms were of short duration, and in the course of a few minutes it died.

In a second* experiment, conducted in the same manner, but with this difference, that the blood remained in the cup for thirty seconds only instead of sixty, the resuscitation was complete, as the animal, though languid, was able to walk, and became so lively and sensible, that it took a pleasure in being caressed. Yet it died in the course of twelve hours.

From a cursory survey of these and similar experiments, it appears that the blood, by lying in the cup between thirty and sixty seconds, is rendered unfit for the purposes of life. Although, however, on a first view they appear conclusive, they are in reality liable to some strong objections, arising out of a principle which I shall next endeavour to elucidate.

It has been very generally asserted, that the blood of one kind of animals may be substituted with impunity for that of another; and that the dog, for instance, would suffer but little inconvenience, if it were drained of its own blood and replenished from the sheep. This principle, however, which is now seldom controverted, is rendered extremely doubtful by the following experiments.

Three† dogs were drained of their own, and supplied with human blood, in the manner already described; only the injection was performed without delay; for the blood was taken up by the syringe while flowing into the cup, and injected into the vein immediately. Yet all these dogs, although they recovered for a time, died, one of them in a few minutes, another in a few hours, and a third several days afterwards. The last, indeed, appeared for a time likely to recover, but it died with a dropsy of the pericardium. It is proper however to add, that another dog, on which a similar operation had been performed by Mr. Goodridge of Barbadoes, a gentleman who was at that time finishing his studies at the United

* Register, Experiment 7.

† See Register.

Hospitals, eventually recovered. The truth is, the constitution of this animal was so vigorous that it resisted the shock; and yet, for a few hours after the operation, a variety of unfavourable symptoms occurred. This experiment, therefore, is in reality in unison with my own; for it is not contended that the exchange of blood *necessarily destroys* life, but merely that it *may sometimes endanger* it.

These experiments acquire additional strength, when associated with others instituted by Dr. Leacock (also of Barbadoes) a few months before; experiments to which I was wholly indebted for my first notions upon this subject. From these it appears, that if a dog is drained of its blood *until apparent death is produced*, it may indeed be revived for a time, and very completely too, by replenishing it from the sheep; but it generally dies in a few days afterwards.

Connected with my own, these experiments of Dr. Leacock possess a peculiar interest; for although they harmonize with them in the general result, they differ materially in their circumstances. It was arterial and not venous blood; the blood of the sheep, and not the human that was substituted; and it deserves *particular notice, that the transfusion was not performed by the syringe*, a method of operating with which he was unacquainted, but simply by the tube.

In considering what has just been advanced, two reflections occur to the mind: first, that transfusion by the syringe powerfully recommends itself, as it enables the operator to inject human blood into human veins; and secondly, that it invalidates the experiments already related, which seemed to prove, that the delay of the blood in the cup renders it unfit for the animal purposes. These were performed with the human blood; and it is obviously difficult to determine, whether death must be attributed to the delay in the cup, or to the substitution of the human blood for canine. Nor in operating on the dog can this objection be avoided; for its own blood coagulates so rapidly, that it cannot be employed. The subject deserves further investigation.

In transfusing human blood by means of the syringe, it is obviously the venous and not the arterial blood that must be injected; for although it would be easy to induce an attendant

to submit to the common operation of bleeding, there are few perhaps but would object to the opening of an artery, even the temporal itself. It is of importance, therefore, to remark, that the venous blood seems to revive an animal, as well as the arterial.

A dog* was drained of its blood by the femoral artery till apparent death was produced; a fresh supply was then injected in the usual manner by the vein. In performing this experiment, however, venous blood was substituted for the arterial; yet the animal recovered, nearly in the same manner as if arterial blood had been transfused. This experiment was the more decisive, as the dog was suffered to lie for a few seconds in a state of apparent death before transfusion was attempted.

In transfusing blood by the syringe, there is a risk lest air should be introduced. To ascertain whether this accident would occasion death, five† drachms of atmospherical air were injected into the femoral vein of a healthy dog, which was scarcely larger in the body than a full sized cat, in quantities of a drachm at a time: but the animal suffered very little injury. It is true, indeed, that deep sighing recurred during the operation, that the pulse became very irregular, and the muscular system tremulous; but these symptoms are produced independently of experiment, from the mere alarm occasioned by tying the animal to the table. The general health, however, certainly suffered. There was restlessness, vomiting, and a continuance of the muscular tremor; and this, it may be remarked, together with the small size of the animal, rendered it difficult to observe the pulse. On the other hand, however, the restlessness continued for a few hours only, and the vomiting occurred but once; the appetite was little impaired; the animal recovered in three days; and during the whole of this period, no symptom of immediate danger occurred. Yet compared with the small size of the animal, the quantity of the injection was large.

In a second‡ experiment upon the same dog, about three drachms of air from the lungs were blown into the femoral

* Register, Experiment 12. † Register, Experiment 13.

‡ Register, Experiment 14.

vein, without even producing much *temporary inconvenience*; so that it seems indisputable, that small quantities of air may enter the vessels without destroying life.

Nor is this principle, which is confirmed by similar experiments of Dr. Haighton and others, materially invalidated by those which have been made upon the horse. For although it be granted that this animal may be killed by blowing air into the veins; this solitary fact can bear with little weight upon the present question, unless the quantity of the air, and the manner of its introduction be also ascertained.

There is little risk in transfusing the human blood by the syringe, lest the operation should be interrupted by concretion; for its coagulation is slow.

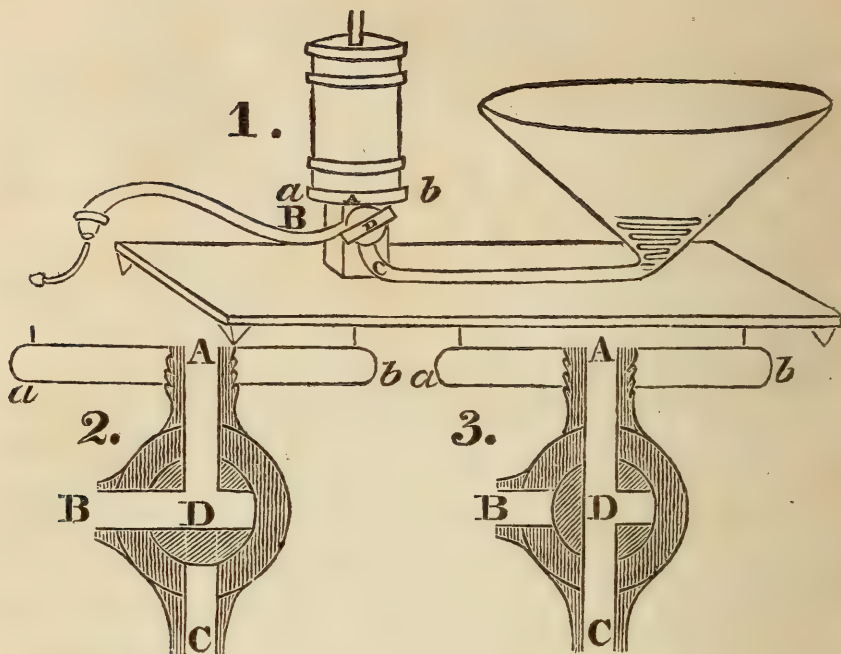
Three* drachms of blood drawn from the femoral artery of a dog, began to concrete in about ten seconds, and had become completely solid in eighty. But an ounce of blood taken from the arm of a girl of an epileptic disposition, but in other respects healthy, did not begin to coagulate distinctly under a minute, and was not completely consolidated in less than six. The blood of the sheep and of the ox coagulates more rapidly than the human†. Now if the dog's blood may, as the preceding experiments prove, be transfused by the syringe without material obstruction from concretion, there can be no difficulty in transmitting the human blood, which requires five times the interval for its coagulation. Indeed, no obstructions of this nature occurred even in conducting those experiments, in which the human blood was suffered to lie in the cup for several seconds before it was injected.

It may be proper to remark, that in executing these experiments, both water and weak wine were injected with impunity, and the instrument was not warmed.

* Register, Experiment 15.

† See Register.

The apparatus used in these experiments, and which it may now be proper to describe, consists of four different parts: the syringe, the cup, the tubes, and the frame.



(Fig. 1.) Exhibits the syringe, &c.

(Fig. 2. 3.) The structure of the double-way cock.

A a b the head of the syringe.

A D B (Fig. 2.) the channel by which the blood is expelled: while A D C is closed.

A D C (Fig. 3.) the channel by which the blood enters: while A D B is closed.

The change is effected by giving the plug D a quarter-turn.

The syringe is constructed in the usual manner; the cup, which is designed to collect the blood, is funnel-shaped; but the tubular part is a little more complicated. It consists of two pipes, with a double-way cock. Of these pipes, one is intended to discharge the contents of the syringe; and is connected by one extremity to the nozzle, and by the other, when the instrument is in action, to the tubule which is inserted into the vein. To this venous tube it fixes by sliding over the end, so that the two may be easily disunited; but it is connected

to the syringe itself by means of a screw upon the side of the nozzle, in such a manner as to lie at right angles with it.

The other pipe, which is designed to conduct the blood from the cup to the syringe, is united at one extremity to the end of the nozzle, and at the other to the bottom of the cup, the point of which opens into it. Of course this pipe is formed with a rectangular curve at either end, so as to give an upright position to the cup.

The two-way cock, which completes the instrument, forms a part of the nozzle; and making a quarter turn, throws open the tube which discharges, and closes that which admits the blood; or the contrary, according to the position in which it is placed.

The whole apparatus is mounted perpendicularly on an upright post; and the floor on which this rests is poised with lead, in order that the operation may not be embarrassed by the instability of the instrument. The joints are air-tight.

The syringe, which was made by Laundy, of St. Thomas's Street, Southwark, is of brass. Its capacity, which, however, admits of regulation by means of a check on the piston, is eleven drachms; small, in order that the blood may not be thrown into the vessels too rapidly, nor detained too long; and of a determinate size, in order that the operator may measure the quantity of the blood which he injects.

In constructing this instrument, the tube which discharges should be made of very pliant leather; and that which admits the blood, may be formed of the flexible metal used for catheters: the first, to prevent the tubule from *wriggling* in the vein during the injection, if the apparatus should move or the animal be restless; and the last, in order that the situation of the cup may admit of more ready adjustment. For the same reason, the upright post, to which the syringe is to be fixed, although it should not move too easily, may be made to turn round.

Various valvular contrivances might be suggested, to command the orifices of the tubes where they unite with the syringe, and give the proper course to the fluids it propels. The two-way cock, however, although it is liable to objections, possesses advantages over every other apparatus of this na-

ture, as it is less liable to be clogged with blood or otherwise deranged, and as it may very easily be made air-tight.

The manner of using this instrument, should it be thought proper to operate with it upon the human vessels, may be easily understood. For this purpose, a vein should be opened in the arm or hand of the patient, and a pipe introduced; then, by the common operation of bleeding, blood should be drawn into the cup of the syringe from the arm of an attendant, and injected without hurry or delay.

In performing this injection, the piston should be played with one hand, while the cock is managed with the other; in such a manner as to allow the blood to enter and escape by the respective tubes.

Before the injection commences, we must expel the air from the tubes, and ascertain that the apparatus is tight. The air is most conveniently expelled by filling the tubes with water, as the small quantity used for this purpose will produce no inconvenience when injected into the veins.

The tightness of the instrument is essayed, by putting a few ounces of water into the cup, opening the cock upon the tube of admission, and playing the piston rapidly; for if no bubbling appear, after the air which had lodged in the apparatus has been expelled, it is secure. If the water used in this essay is tepid, it will give a proper temperature to the instrument.

It should be the task of an assistant to take care that the cup never become empty, as air would be drawn in; and this is an accident which the operator himself may prevent, by regulating the injection according to the supply.

On the other hand, however, the blood should never be suffered to accumulate in the cup in too large a quantity. Should it indeed be hereafter ascertained, that the human blood may lie out of the vessels for several seconds, or till it begins to coagulate, without becoming unfit for the animal purposes, it would then perhaps be better, if this instrument were used at all, to draw half a pint of blood into the cup at once, or at least to keep it pretty full; but until this principle is confirmed by *numerous, pointed, and cautious* experiments, such a method of operation would be unjustifiable.

It may be objected to transfusion in every shape, that the

tube may excite inflammation of the vein. In weighing this and similar objections, however, it should not be forgotten, that in the present state of our knowledge, at least, the operation would be justifiable in the most desperate cases only, when it seemed the only mean of saving the life of the patient. There is much good sense in the familiar maxim of Celsus, and in the present case it is peculiarly applicable; for surely it is better to incur the uncertain risk of venous inflammation, than to leave the patient to his fate. Besides, it is not necessary to tie the pipe in the vein; it may be easily secured by the pressure of the finger, or the blood might be injected by an artery.

Although I have described the manner of using this instrument, it is by no means my design particularly to recommend it. Many, perhaps, will think that the common syringe, a little altered in its construction, would perform the operation equally well; and I know that it was successfully employed by Mr. Goodridge in the experiments to which I have already alluded. Indeed, should it clearly appear from future observation, that the entrance of a few bubbles of air into the human veins, or the delay of the blood for a few seconds in the cup or the syringe, does not endanger success; perhaps no reasonable objection could be urged against this instrument, and it strongly recommends itself by its portability and simple structure.

In pointing to some of the advantages which belong to transfusion by the syringe, I shall not enter into details. I forbear therefore to enlarge on the facility of the operation, or its uses in physiological research; and shall content myself with touching upon three advantages, which appear the most important.

This operation may be performed with *promptitude*; for the human blood is always at hand, and the instrument may be easily provided, as the danger of uterine hemorrhagies, at least, may frequently be foreseen. Promptitude of operating is no inconsiderable advantage, for the apparent death of hæmorrhagy soon becomes irremediable.

If a dog, drained of its blood, be suffered to lie in a state of asphyxia for a few minutes only *after respiration has ceased*, transfusion itself, aided by the hot bath and artificial respiration, will not revive it. This at least is the general result of

the *few* experiments which I have hitherto made; and it proves how speedily the apparent death of hemorrhagy is converted into the real.

Another advantage which arises out of this method of operating, is the abundance in which the blood may be transfused. A dog below the middle size, (and this variety, perhaps, is the most frequently found about our houses,) generally dies after it has given off from eight to twelve ounces of blood; but much larger quantities of *human* blood might be easily obtained from the attendants.

It must be confessed, however, that it is not necessary in cases of hæmorrhagy to throw into the vessels as much blood as they have lost; a very small supply, although it will not restore the energies of the animal, will preserve its life. This truth, which is in some measure established by the result of the first experiment, is so generally admitted, that it is unnecessary to enlarge upon it; yet I cannot forbear adding, that it seems to deserve a more minute investigation than it has hitherto received.

But of all the advantages derived from transfusion by the syringe, by far the most important is the opportunity it offers of throwing human blood into human veins. There seems reason for surmising, from facts already related, that the blood of one class of animals cannot be substituted, in large quantities, for that of another with impunity; and hence it becomes of the utmost importance, that we should be able to supply the human vessels with the human blood. Every other method of transfusion with which I am acquainted, is exposed to this grand objection, that it transfuses the blood of the brute—a defect, from which the operation by the syringe is *exclusively* exempt.

REGISTER OF EXPERIMENTS

On the Transfusion of Blood from the arteries of one dog to the veins of another by means of the Syringe.

I. *History*.—A tube of the full size of the vessel was inserted into the femoral artery; and about ten ounces of blood were discharged in the course of two minutes. No more could be got away.

After the dog had been suffered to lie in a state of apparent death for a few seconds, two ounces of arterial blood taken from another were thrown by the syringe into the femoral vein, through a pipe introduced for this purpose with its extremity toward the heart.

Symptoms.—The first symptoms produced by the bleeding were distress, struggling, and laborious respiration; and these were soon followed by gasping, extreme relaxation of the abdominal muscles, and apparent death.

The distress is indicated by a peculiar sort of cry.

A few seconds after injection the animal revived; the abdominal muscles became firm, the respiration regular, and the circulation was renewed with such force, that the blood pushed a coagulum from the arterial tube and gushed out.

Observations.—As the dog was small, the quantity of blood drawn away may be regarded as considerable; and it should be observed, that the symptoms enumerated above are, as repeated experiments have proved, invariably followed by death, unless transfusion is performed.

This experiment not only proves, that transmission through the syringe does not unfit the blood for the purposes of life; but shows further, that to obviate the fatality of hæmorrhagy, it is not necessary to inject as much blood as has been lost.

II. *History.*—The blood was suffered in this, as in the preceding experiment, to flow as long as it would from the tube inserted into the femoral artery; and about eight ounces were discharged.

Six ounces were then injected as before, and the dog recovered.

Symptoms —By this bleeding apparent death was produced, together with a whole assemblage of precursory symptoms, enumerated in the preceding experiment.

Observations.—This experiment, performed on the same dog as the preceding, is little more than a repetition of it; but a larger quantity of blood was injected.

III. *History.*—In this experiment the blood was drawn off in the same manner as in the preceding, the following differences excepted. It was drawn from the carotid, and not the femoral artery. It was not drawn at once, but at three different

times, a few seconds intervening. The dog was small, scarcely larger in the body than a male cat, so that no more than five ounces of blood could be got away.

After the apparent death had continued for a few moments, the blood of another dog was injected; not, however, till it had lain previously for a few seconds in the cup.

Symptoms.—Apparent death was produced, and preceded by the usual symptoms.

In a very few moments after the injection the dog recovered, and so completely, that he leapt from the table as soon as he was unbound. The pulse, indeed, for a little time after the operation was intermittent and unequal, but these symptoms are frequently produced by merely tying the animal to the frame.

Observations.—The lively health of this dog immediately after the operation, was strikingly contrasted with the languor of another, which was supplied in the same manner with the human blood instead of the canine.

It is obvious from these experiments, that blood is not rendered unfit for the animal purposes by passing through the syringe.

Transfusion by the Syringe from the arteries to the veins of the same animal.

IV. *History.*—In this experiment, a tube was inserted into the carotid artery and the external jugular vein; and the extremities of both were directed towards the heart. The syringe was then adapted; and the blood, which was suffered to flow into the cup from the artery in a full stream, was directly returned into the vein, in quantities of three or four drachms at once. In this manner, about six ounces were transfused; after which the operation was suspended for a few minutes. After this delay, six ounces more of blood were passed in the same manner through the syringe; only the blood was injected with less impetuosity, in quantities not exceeding three drachms at a time. After another pause, four ounces more were transfused; so that the aggregate quantity of the blood which passed through the syringe in this experiment was a pint. No air was suffered to enter into the vessels.

Symptoms.—The pulse occasionally intermitted in the first stage of transfusion, but there was no obvious change of temperature.

During the second and third stages, the temperature remained unaltered, and the heart seemed to beat naturally, without labour or intermission.

The dog was rather languid for a few hours after the operation, but recovered without the occurrence of any material symptom.

Observations.—It deserves remark, that in this experiment one pint of blood was passed through the syringe without serious inconvenience, although the loss of half a pint would have destroyed a dog of the same size.

The irregularity of the action of the heart arose, perhaps, in part from the injury the blood sustained in passing the syringe; but principally, as I suspect, from alarm, and from the manner in which the blood was thrown in; for as this was one of the first essays, the operation was not conducted, at the commencement especially, without a little hurry. It should be observed too, that in the first stage, three or four drachms, at least, were injected at once; and as these were thrown into the jugular vein, they must have passed directly into the right auricle—a cavity, perhaps, scarcely large enough to receive them without inconvenience. Accordingly, towards the close of the experiment, when the blood was injected more equably, and in smaller quantities at once, the action of the heart became more regular.

V. *History.*—This second experiment was executed in the same manner as the former, a few differences excepted: The blood was injected at four different times, instead of three; the injections were continued a greater length of time, and the last was pushed so far, that the blood which issued from the carotid artery, acquired the florid arterial colour in a *very high* degree.

Owing to the imperfection of the apparatus, about a drachm of air got into the vein.

Symptoms.—The pulse intermitted, in consequence of agitation, before the transfusion began; but during the operation these intermissions became more frequent, occurring every

five or six beats, so that the blood sometimes flowed impetuously, at others sluggishly, from the carotid artery. The respiration, however, on the whole, continued natural; and the temperature of the animal underwent no obvious change. Toward the close of the experiment, the intermissions became less frequent, and in a few minutes after ceased altogether.

The entrance of the air did not occasion any unusual symptoms.

Observations.—The most remarkable symptom occurring in this experiment, which was pushed to a much greater extent than the preceding, was the intermission of the pulse. This must certainly be attributed in part to alarm, for it was observed before the operation commenced; but it seems also to have arisen partly from the unequal and impetuous stream, in which the blood was thrown into the heart. It is obvious, that it cannot be ascribed to the arterial nature of the blood which was injected into the veins, or the changes it suffered in passing the syringe; for although the arterial characters of the blood were heightened as the experiment proceeded, and some of it at least had passed the instrument more than once; these irregularities, instead of increasing, became less and less frequent.

VI. *History.*—This experiment in the main resembled the preceding, but it was performed on the femoral vessels instead of the cervical, and the blood was injected at three different times.

The first transfusion was continued eight minutes, during which the blood was suffered to flow in a full stream from the femoral artery, and acquired the arterial characteristics in a high degree: the second was performed half an hour after the former, and continued for the same length of time: the third was carried on for the same period, after a pause of half an hour, and a few small concretions formed on this occasion in the cup.

Symptoms.—Before the transfusion began the pulse was unequal and intermittent, but became regular and distinct as it proceeded. It beat 150 times in the minute, which in this dog was nearly its natural frequency. The respiration was accelerated during the operation, and the dog occasionally

complained a little; but its temperature remained unaltered, and the animal ultimately sustained but little injury.

Observations.—The regularity of the pulse during this operation is very remarkable, especially if we consider its great irregularity in the preceding experiments. It must be recollected, however, that the transfusion was performed in this instance upon the femoral vessels, which are remote from the heart, and not on those of the neck.

Half a pint of blood flowed from the femoral artery of this dog in about two minutes; consequently about twelve pints must have been discharged in this experiment, and transmitted through the syringe, in twenty-four. The dog itself, however, weighed less than twelve pounds; and hence it is obvious, that the blood in the large arteries must have issued repeatedly, and repeatedly passed the syringe, which accounts for its heightened arterial character.

The formation of concretions deserves notice, as it proves that the blood in this animal remains fit for its peculiar functions, although certain parts have begun to coagulate.

From these experiments it appears, that the blood remains fit for the vital purposes, although it have *repeatedly* passed the syringe. They confirm the former.

Experiments in which the blood was exposed for a short time in the cup.

VII. *History.*—In this experiment pipes were introduced into the femoral vessels, and about ten ounces of blood were drawn from the artery, but no more could be got away. Immediately afterwards, about ten ounces of human blood were injected by the vein. This blood was taken from the arm, and about two ounces were suffered to accumulate in the cup, and to lie there for thirty seconds before they were injected. No air got into the vessels.

Symptoms.—Apparent death was produced by the bleeding, and the animal revived as usual in consequence of the injection: the pulse beat 120 times in the minute, and did not intermit; the respiration became regular, and the abdominal muscles firm. The extremities and ears felt rather cool; but this symptom is produced occasionally by merely tying the dog to the

frame. After the operation, the animal walked, took food, and appeared pleased with caresses; but it died within twelve hours afterwards.

Observations.—The dog on which this experiment was performed was aged, but healthy.

VIII.—*History.* This experiment was conducted like the former, but the dog was small, and only four ounces of blood could be drawn away, when a complete asphyxia was produced. The same quantity of human blood was injected, after it had lain in the cup for sixty instead of thirty seconds.

Symptoms.—The dog revived for a time, respiration and circulation were renewed, but the recovery was temporary, and it died on the table.

Observations.—The dog which was made the subject of this experiment was perfectly healthy, and though small, full-grown. The small quantity of blood drawn away, not exceeding four ounces, renders the death the more remarkable.

These experiments prove, apparently, that the blood is unfitted for its functions by lying between thirty and sixty seconds in the cup of the syringe; but they are invalidated by those which follow.

Experiments in which the dog was drained of its own, and supplied with human blood.

IX. *History.*—More than seven ounces of blood were in this experiment drawn from the femoral artery, and six ounces of human blood were injected in their stead. This was received in the cup of the syringe as it flowed from the arm, and thrown directly but tranquilly into the vein.

Symptoms.—In consequence of the bleeding, the usual symptoms were produced, and terminated in profound fainting; but the dog revived after the injection. Sensibility was restored, together with tension of the abdominal muscles, respiration, and a circulation so active, that the blood gushed from the arterial tube. These symptoms, however, continued a few seconds only, when the action of the heart became very irregular, and the dog gasped, gaped convulsively, made ineffectual attempts to vomit, and died.

Observations.—This dog was rather large, very lively, and

did not undergo much fatigue during the operation. It will be observed too, that the quantity of blood drawn away was not very large, considering the size of the animal, and that a temporary revival was produced; circumstances which make death the more remarkable. Preceding experiments put it, I think, beyond a doubt, that if canine blood had been transfused instead of human, the animal would have recovered.

X. History.—This experiment resembled the former, some slight differences excepted. Eight ounces of blood were drawn away from the femoral artery, and six of human blood were injected in their stead. The blood was thrown in without hurry, as fast as it flowed from the arm, in quantities of half an ounce, without being permitted to lie in the cup; but in consequence of the hasty and careless manner in which the apparatus had been put together, a few bubbles of air got into the veins. See Experiment V.

Symptoms.—Apparent death was produced by the bleeding; but as soon as the human blood was thrown in, the animal revived, and the blood, beginning again to circulate, flowed, though feebly, from the femoral artery; in the course of a few minutes, however, the same symptoms occurred as had preceded the death of the former dog: the animal gasped, yawned convulsively, and vomited; and after lying about an hour upon its side in a state apparently approaching to fainting, it expired.

Observations.—The general course of this experiment resembles that of the former; and it may be observed, that the small quantities of air which entered the vessels were not sufficient to occasion death. The proof of this assertion is derived from experiments which will be presently related, and from the event of the Vth, in which a similar accident occurred.

XI. History.—In this experiment, four ounces of blood were drawn from the femoral artery, and three of human blood were injected by the vein, in quantities of half an ounce at a time.

Symptoms.—The bleeding produced the usual symptoms, but the apparent death was not so complete as in the preceding experiments; it may be observed, however, that the revival after the injection was more perfect, as the animal did not vomit, and was able to walk, though unstably. Two hours af-

ter the injection there was thirst, languor, and debility; and the pulse was so small and weak, that it could not be distinctly ascertained whether it intermitted or not. These symptoms, however, gradually subsided, and on the *third* day it appeared to be rapidly recovering, but drooping a second time one or two days afterwards, it died on the sixth with a dropsy of the pericardium. An ounce of fluid had accumulated in this membrane, but there were no signs of inflammation, nor was there dropsy of the other cavities.

Observation.—This dog was very small, but healthy and lively.

If we may rely on these experiments, the human blood cannot be safely substituted, *in large quantities*, for that of the dog. It is certain that death was not produced accidentally, from the hurry of injection, or from plethora, from suffering the blood to lie in the cup of the syringe, or the dog to continue too long in a state of apparent death before the injection was performed, for all these accidents were carefully obviated.

Experiments on the Transfusion of the venous, instead of the arterial blood.

XII. These experiments were conducted in the same manner as those in which arterial blood was injected, but as the blood flowed rather sluggishly from the femoral vein, the injection was slowly performed. The dogs recovered.

Experiments on the injection of air into the veins.

XIII. *History.*—In this experiment five drachms of air were injected into the femoral vein of a dog, in quantities of a drachm at a time, and at intervals of thirty or forty seconds. The quantity of the air was measured by means of the syringe.

Symptoms.—During this operation, slight difficulty of breathing was produced, and the dog sighed deeply; the pulse, too, became unequal and the muscular system tremulous. As soon, however, as the animal was liberated, it leaped from the table, licked its wound, and seemed pleased with caresses. On the following day it was languid and restless, and the muscular tremors continued; the pulse intermitted occasionally, and the dog vomited once. In other respects it appeared tolerably

well, took food greedily, and revived completely by the third day.

Observations.—The dog which was made the subject of this experiment, was scarcely larger in the body than a full-sized cat, and very delicate. Its size considered, the quantity of the air which was injected is large; yet all the symptoms may be imputed, in part at least, to the alarm which the operation excited. The effects of these agitations seem sometimes to continue for hours, if the impression is strong, especially in dogs which are naturally timid, as this was.

XIV. *History.*—About three drachms of air were blown from my own lungs into the femoral vein of the dog; the greater part of it was introduced at once.

Symptoms.—The respiration and circulation were not materially affected, and the dog suffered so little, that a day or two afterwards it was led into the country.

Observations.—This experiment was made on the same dog as the former, and in the same manner; but the air which was injected had previously passed through the lungs, and three drachms were thrown in instead of five. The animal was less alarmed than in the preceding experiment, and hence, perhaps, in part the mildness of the symptoms.

From the two preceding experiments it seems that air, whether atmospherical or from the lungs, may be injected into the veins of the dog, and this too in considerable quantity, without fatally deranging the functions.

Experiments on the time required for the coagulation of canine blood.

XV. Three drachms of blood, taken from the femoral artery of a dog, and collected in the bottom of a conical wine-glass, began to coagulate in about ten seconds; were wholly coagulated in about eighty. In a second experiment the blood began to coagulate in about ten seconds; and was wholly coagulated in sixty.

The blood of the dog, therefore, coagulates more rapidly than the human.

N. B. As these experiments were designed merely to establish the general truth, they were not made with nicety.

Some observations on the cure of Hydrocele of the Tunica Vaginalis Testis, without procuring an obliteration of the Sac.

By KINDER WOOD, Esq. Member of the Royal College of Surgeons, and Surgeon in Oldham.

[From the Medico-Chirurgical Transactions. Volume IX.—Part I.]

I AM desirous of offering the following cases of Hydrocele of the Tunica Vaginalis Testis to the Society, because the cures were remarkably easy and expeditious to the patient, and effected by a slight extension of the palliative operation or simple puncture; and also because this successful result was procured without inducing an adhesion of the tunics and obliteration of the cavity of the sac. I trust there are many cases where the same operation will be equally successful, and I have therefore taken the liberty of adding such remarks as a consideration of the subject has suggested, which I hope will not be deemed too tedious an intrusion upon the time of the Society.

CASE I.

I was desired to examine a tumour of the scrotum, by a man who had been affected with the disease sixteen years. It had appeared after an injury of the parts, and had always been thought a rupture. He was of an healthy and robust habit, fifty years of age. I found the disease to be a Hydrocele of the Tunica Vaginalis Testis of the left side. The tumour was opened with a broad shouldered lancet, in the customary situation, the lancet in consequence of its figure making a larger incision into the external covering than into the Tunica Vaginalis; fourteen ounces of clear water were evacuated through the opening; when the Tunica Vaginalis was emptied of its contents, and a small part presenting at the internal opening, this was slightly hooked with a small dissecting hook, and a portion so brought forward through the internal incision, as to enable me to cut it away with a pair of fine scissors. The puncture was then closed and supported with adhesive plaster; the parts were put into a bag truss, and the patient enjoined rest and a recumbent position. The day after the evacuation

the patient was walking about the house upon my visit; there was a little tenderness and tension of the scrotum upon examining, but no pain in the loins nor fever. The third day the scrotum was much the same; the plaisters were removed and fresh ones applied, as they did not lie comfortably. On the fourth and fifth day the man walked up to my house, and from this time the tenderness and tension of the parts gradually subsided; the incision healed in an ordinary time by the first intention, and the result was a complete cure in less than a fortnight, so that the man returned to his customary employment.

In this case it is evident, that the consequence of removing a small portion of the *Tunica Vaginalis Testis*, was only a gentle and favourable inflammation of that membrane, the mildness of which was doubtless to be attributed to the endeavour of healing the external opening by the first intention. I have frequent opportunities of seeing this patient, and as the inflammation was so very mild, it always appeared to me that the cure was effected without any obliteration of the cavity of the sac. On the 20th of July, 1817, I examined the part, several years after the operation; it was rather fuller than the opposite side of the scrotum, but perfectly cured, and the testicle manifestly unconnected with the *Tunica Vaginalis*.

CASE II.

I opened a Hydrocele of an elderly healthy man, which had appeared without any ascribable cause six months previous; eight ounces of a clear transparent fluid were evacuated, a small portion of the *Tunica Vaginalis Testis* was cut away, as before stated, and the external opening healed by the first intention in little more than a week. On the second day the scrotum was tender, and a little enlarged, which gradually subsided from the fifth day without the use of any external or internal means, except being supported in a bag truss. No effusion has since taken place. I lately examined the part, and could find no trace of the existence of a previous disease, except the remains of the puncture, which was very slight and scarcely perceptible; and as several years have elapsed, there can be no expectation of a return of the affection. But my attention was chiefly turned to an examination of the natural

connections of the parts, with a view of confirming my notes of the case; and I can have no hesitation in asserting, that no union has taken place betwixt the Tunica Vaginalis and the Tunica Albuginea Testis.

CASE III.

Mr. R. consulted me about an enlargement of the left side of the scrotum; four years previously he had hurt the part against the saddle when hunting. The enlargement commenced in a short time afterwards: it was not very large; attended with numbness of the thigh and sense of weight in the loins; it was of a pyramidal shape and transparent. The disease being evidently Hydrocele, a puncture was proposed, to which the patient was extremely averse; the disease however enlarged, and he submitted. About five ounces of water were evacuated through a puncture with a broad shouldered lancet, a portion of the Tunica Vaginalis was brought forward and cut away with scissors; the external opening was accurately closed, held together with adhesive plaister, and supported in a bag truss; in the afternoon the patient walked about his house, giving directions to some workmen without any inconvenience. Upon the second day I visited him, and found that he regularly walked about his house and garden, without sustaining any particular inconvenience, having kept the part supported. The scrotum was slightly tumefied and rather tender to the touch, but there was no pain in the loins or fever. On the fourth day he walked to my house about a mile; the plaister was removed and another applied; the scrotum was still rather full and tender, but these symptoms gradually subsided, and in less than a fortnight the part was quite well. In this case also, the cure was completed without an abolition of the cavity, and a sufficient time has elapsed to decide upon its certainty.

It is easy by careful examination to ascertain, whether or not the cure of Hydrocele has taken place without abolishing the cavity of the sac. Upon the day I examined the scrotum in the second case, I also examined a scrotum where cure was effected by the abolition of the cavity. In this latter case the testicle was rather harder, larger, and less moveable beneath the external; covering and this may be expected, since the union of the two tunics necessarily diminishes the mobility of

this organ, and gives a sensation as if the testicle rolled immediately under the scrotum, having no greater space of motion than is allowed by the looseness of the cellular membrane. The contrary is the case when the cure is completed without obliterating the cavity, the testicle retaining all that looseness and mobility which it possesses in a state of nature.

In these cases no such effusion took place as that recorded by Mr. Ramsden, as immediately succeeding the quantity of stimulus he gave to the inner surface of the sac; the effect of cutting away a small portion of the Tunica Vaginalis, and healing the opening in the scrotum by the first intention, is evidently inflammation of that membrane, unaccompanied by any effusion of fluid, or inflammation of the testicle: in the three cases above related, the inflammation was also unusually mild, and not succeeded by any obliteration of the sac.

There is not any opinion in the practice of surgery, which has had so unlimited an acquiescence, as that the cure of Hydrocele requires a complete obliteration of the cavity containing the fluid. Douglas first seems to have had some doubts upon this, but rather insinuates than affirms the doubt, by considering an union as very improbable in those cases where the sac is old, thick, and indurated. From the universality of this opinion it has necessarily followed, that all operations proposed for the radical cure, are founded upon a presumption of the necessity of this obliteration; the cases of Mr. Ramsden, however, prove that this is matter of assumption only, and not of fact, and there are other observations which show how unfounded has been the opinion which has had so unanimous a concurrence. When Hydrocele is dispersed by the use of discutient applications, which has happened occasionally in adults, and which I have frequently seen in children; and when the fluid is absorbed from other causes, of which Mr. Pott gives two cases, undoubtedly the cavity of the Tunica Vaginalis Testis undergoes no process of abolition: but what has most frequently happened, and the process of which has excited little inquiry, is that recovery which occasionally succeeds to simple puncture and the evacuation of the fluid.

Mr. Elsa was of opinion that the simple puncture was more successful formerly than at present, owing to the puncture being

made larger; if this were really the case, it would be desirable to return to such a practice; for to cure by one mild operation, is better than to cure by two mild operations; and it is laid down by Sir James Earle in his excellent work, that previous to attempting a radical cure, the palliative operation should always be performed once. But the cause of cure after puncture will not be found in the size of the incision. Mr. Pott, to whom this operation is under so great obligation, has pointed out the cause of cure, though I think he has not drawn such an inference as the premises warrant. "If the opening in the Tunica Vaginalis was small and united again immediately, the bag always filled again with water, and the disease recurred." So says that admirable writer: and again he remarks, "If the orifice instead of immediately uniting became inflamed or sloughy, such an adhesion of the coat to the albuginea testis sometimes followed, as caused an abolition of the cavity, and consequently a radical cure." Warner has a case very much in point: a puncture was made with a lancet, and a tent introduced through the opening; a discharge came on on the fourth day, followed by an abscess, which being opened healed in a few days. I presume that such a rapid healing of the abscess could not possibly have taken place, had there been any collection within the cavity of the Tunica Vaginalis Testis; such a collection of pus healing thus could only have been situated in the cellular membrane of the scrotum. What then is the inference we would draw, but that when the opening heals by the first intention, we fail in producing a cure; and that when the opening does not heal by the first intention, a cure very frequently follows, not indeed in the greater part of cases by the abolition of the cavity, but because the inflammation of the sac thus excited rouses and stimulates the exhalant vessels to a more vigorous and healthy action, thus overcoming that relaxed and atonic state of them which is the cause of the accumulation.

Whatever may be the remote causes of Hydrocele, the proximate cause will not be found in diminished action of the absorbent vessels; of this Sir James Earle's 25th Case is a proof: a small incision was made into a Hydrocele immediately after a bruise, when a fluid, of which the major part was

blood, issued out; the bag was not emptied, but closed and healed. A short time after the tumour was again opened, and the fluid discharged was of a pellucid straw colour. Upon this case the author remarks, that the absorbents on the surface of the membranes appear to have had the power of separating the red globules and absorbing them; whether this follows as a consequence I do not inquire; enough is proved for the present purpose, that the absorbents, so far from being tardy or inert in their functions, were in a state of considerable activity; and we are reduced to explain the phenomena of the disease upon the grounds of an increased secretion only. Whether the accumulation of the fluid be the consequence of an increased activity of the vessels, as is Mr. Ramsden's opinion, or of a relaxed and debilitated state of them, may be difficult to decide; but from the total absence of all symptoms denoting increased action, and since a cure does frequently follow the application of a stimulus to the sac, it would appear that the proximate cause of the effusion consists in a relaxed and debilitated state of the exhalant vessels of the part.

If these opinions are correct, it would appear, that a stimulus to the vessels of the part, and not an union of the two membranes, is the natural cure; for who would prefer abolishing a cavity which doubtless has its uses, so far as regards the functions of the testicle, rather than to effect a cure by stimulating diseased vessels to a sound healthy action. The inducing a certain degree of inflammation, has the effect of stimulating these vessels and superseding the diseased state of them, as Mr. Ramsden's cases prove. Nor is the part singular in this respect: many chronic affections are cured by increasing the actions of the vessels, particularly that chronic ophthalmia which consists in relaxation and debility of the blood-vessels of the albuginea of the eye. What then have we to do, but to stimulate and excite these vessels in the most easy and the most natural manner?

It is well known, that when a puncture is made into circumscribed cavities, if union by the first intention does not take place, the consequence is an extension of inflammation from the puncture along the membrane lining the cavity; such takes place with an amazing rapidity in cases of puncture of the pe-

ritoneum, pleura, and in the membranes lining the large joints; and such an inflammation also takes place in the membranous bag containing the water of Hydrocele under the same circumstances. It is this inflammation ensuing upon a want of union, which is the most frequent cause of the cure of this disease, when such cure takes place after the simple puncture. Undoubtedly, in some cases where the Tunica Vaginalis and the Albuginea Testis are very much irritated during the evacuation, either by too much handling or other circumstances, these tender and delicate membranes will inflame too highly, and suppurate or slough, and thus produce a cure of which there are many cases in authors; but in the majority of cases of cure under these circumstances, it is effected as in the cases related in the commencement of this paper, by a slight and mild inflammation of the Tunica Vaginalis Testis alone. The object then will become that of preventing the opening in the Tunica Vaginalis from healing by the first intention, and also to do this in such a manner as to avoid the danger of suppuration and sloughing; for this purpose, since it is adviseable that the palliative operation should always be performed once previous to attempting the usual means for a radical cure, I would recommend a slight extension of it as in the cases above related, viz. to bring gently forward by means of a small hook that portion of the Tunica Vaginalis presenting at the external opening, and to cut away the portion thus hooked with a pair of scissors, afterwards closing the external opening with adhesive plaister. By which means a moderate inflammation of the membrane will be ensured, and I am led to hope the success will be frequent.

In the three cases related, the sac was not much thickened; a material circumstance to notice, because in old and very large Hydroceles, and where the sac is much thickened and indurated, a stimulus much greater than the means here proposed will produce is required; and hence it will be necessary to guard against disappointment, by putting the proposed plan in execution only where there is a probability of success, which is in moderate sized cases, not too old, and where the sac is not too much thickened and indurated.

The following case is subjoined, because the plan was put

in execution under the most unfavourable circumstances of bad health; and it shows that although the symptoms ran high, they were not so troublesome as those which would have succeeded any other operation, nor indeed does it appear that any other mode would in this case have been admissible at all.

A man about forty-five years of age had been under my care some time for affections of the chest, attended with cough, large mucous expectoration and dyspnœa; his countenance was very sallow; he was low-spirited, and could not sit much up, when he showed me a Hydrocele of the left side of the scrotum. As I was very averse to the making an opening, he was advised to suspend the part and wait patiently. Understanding, however, that the collection was watery, he became resolute to have it discharged, and in compliance with his earnest request more than my own inclination, a puncture was made with a lancet; betwixt ζ_{iii} and ζ_{iv} of straw-coloured fluid evacuated, and a small portion of the Tunica Vaginalis cut away. This was succeeded by an inflammation of the substance of the testicle itself: he was advised to support the part and keep a recumbent position, which he did for three weeks; the inflammation of the testicle was very violent and painful during its continuance, and yielded slowly to the ordinary treatment. After the pain was gone, it continued obstinately enlarged and hard many months, so as to require a constant suspension. In this state he returned to his customary occupation, and the tumefaction gradually subsided. During the confinement, and the violence of the affection of the testicle, the irritation of the chest gradually subsided and disappeared, and I was very much induced from its previous obstinacy to conclude, that this affection of the testicle had a powerful effect in superseding the troublesome and formidable disease in the breast. In the beginning of August, eighteen months after the puncture, I examined the testicle, and found it a little larger than the opposite one, but no other perceptible difference from nature, excepting an evident adhesion of the Tunica Vaginalis to the Tunica Albuginea.

Observations on the Sickness which prevailed at Jessore, (Bengal), in the Months of Aug. and Sept. 1817. By ROBERT TYTLER, M. D. Assistant Surgeon, Civil Station, Zilla, Jessore.

[From the Medico-Chirurgical Journal for October, 1818.]

THE situation allotted for the station, comprehending a few brick-built, scattered houses, chiefly lower-roomed, or consisting of one story, but well elevated and flued, and inhabited by the Europeans, is a flat spot of ground, intersected with ditches, and containing much jungle, along with indigo and paddy fields, reaching close upon the premises surrounding the habitations. On the north side is an inconsiderable branch of the Ganges, having little communication with the parent river, and which, except in the rainy season, is almost stagnant. On the *northern* side of this, opposite to the town, a broad space of low and sunk ground is left uncovered, and, during the wet months, converted into a stagnant offensive marsh. Along the *southern* bank the BAZAR runs in a continued line for a space of more than two miles, consisting of narrow and damp streets, lined with huts, crowded upon each other, and containing, for sale, various putrescent articles of food, emitting disagreeable and noxious effluvia. The walls of these huts are constructed of bamboos and straw. They are perforated by very narrow windows, have but one small door, and consequently free ventilation of atmospheric air never takes place within their dismal interiors.

From the end of January, much rain fell, which is rather an unusual occurrence in Bengal; in consequence of which the lower grounds were, in several places, inundated, and by the solar heat a considerable extrication of miasmata succeeded, and some mortality prevailed, but not to any great extent.

On the 19th of August, when the prevalence of a general disease was expected, a case of severe illness was reported to me by a native doctor. I found a middle-aged man in a state of great prostration of strength, surrounded by his friends, who were pouring water into his mouth. The preceding day he was in perfect health. In the night, he had been seized

with violent abdominal pains, repeated vomiting, frequent discharges from the bowels, and incessant thirst. The symptoms in the present case were precisely the same with those since ascertained to mark this peculiar disorder. The face exhibited a livid paleness (indicative of great corporeal distress in a native); the eyes were hollow; the eyelids half closed; the forehead bedewed with cold perspiration; the extremities and surface of the body frigid; no vestige of pulse at the wrists or temples.* He died the next day; and it was now ascertained that seventeen had perished in the same manner during the two or three preceding days.

The rapid progress of the disorder now produced universal alarm among the natives; and I find, by my notes, that on the 21st of August fifteen men died in the Bazar, all affected with the same symptoms; viz. violent gripings, vomiting, and purging, which, if not relieved soon, generally terminated fatally in a few hours.

As the usual modes of treatment employed in cholera morbus afforded little prospect of benefit, I ventured to have recourse to calomel and opium; and the success of the practice exceeded all expectation, especially when exhibited early, and before the constitution became so enervated, that no hope existed of recalling the flitting spark of life.

In order to obviate this nervous depression, I resolved to administer a volatile antispasmodic mixture, containing two ounces of æther, the same quantity of spirits of ammonia, and a quart of water. This mixture proved of the greatest benefit. These were the only remedies employed by myself, and under my own directions by the native assistants in the town of Cushbah, its vicinity, and the jail; and, notwithstanding the hurry and confusion consequent on so extended an epidemic, the number rescued from the jaws of death, by these means, considerably exceeds two hundred, most of whom are now living at Jessore.

The method of treatment was this. Eight grains of calomel

* Dr. Tytler here, and throughout the paper, labours to trace the cause of this epidemic to damaged rice; but the reasonings are so bad, and the facts so dubious, that we entirely omit them. The causes of this epidemic will be more rationally accounted for in the succeeding paper, by Mr. Evans. *Editor of the Med. Chir. Journal.*

were invariably administered at the first visit, followed by the opium in doses of a grain, and the antispasmodic mixture, as the reduction of the pulse, and frigid feel of the skin, indicated its exhibition, and the continuance of the calomel at intervals, in doses of four grains till the virulence of the symptoms was subdued. In some cases, the calomel was taken to the amount of 30 grains, in the course of twenty-four hours; the opium to four grains in the same time; and the mixture, containing the ammonia and æther, eight ounces. But in general, upon swallowing the dose of calomel, the vomiting ceased, and the patients were relieved.

Pathology. Only one dissection could be procured—a convict in the jail. The mucous membrane of the stomach and bowels was inflamed.

The following observations on this Epidemic, as it appeared in Calcutta and the neighbourhood, were obligingly communicated by Mr. William Evans, who was an eye-witness.

“The year 1817 was uncommonly irregular. The rains set in about the middle of February, and continued till the night of the 17th of October, concluding with a heavy fall. The thermometer, during all this wet season, ranged from 85 to 98°. The whole country became inundated, was one vast swamp, and sent forth the most pestilential miasmata. The number of natives who fell victims to this disease at Calcutta was almost incalculable. Several hundred bodies were burnt every night at some of the Ghauts leading from Chitpore road to the Hoogly, and the ashes thrown into the river. There were full as many thrown into the water, for want of sufficient fuel to burn them. The floating corpses at length became so numerous, and so entangled among the cables of the shipping, that the stench was unbearable, and the magistrates were forced to employ Mussulmen to clear the bodies away.

“The environs of Calcutta exhibited, towards the latter end of October, the most appalling scenes of distress. Most of the palankeen bearers and coolies fled to the country in hopes of escaping the sickness; and by crowding into obscure villages, spread the epidemic in all directions. But few of the Europeans suffered, evidently owing to their more comfortable lodgings, and superior salubrity of food, clothing, &c.

“ About the 20th of October the monsoon changed to the north-east, with a cold piercing wind; the ground still wet. The disease now quickly changed its type from cholera to dysentery, which became milder and milder to the end of November, when it ceased altogether. At this time the country was dry.

“ During August and September, cases of fever were not unfrequent, and several Europeans were cut off in a few hours by the violence of the disease. At Calcutta the attack frequently came on instantaneously, with large frothy stools; vomiting of limpid fluid, sometimes mixed with bile; great prostration of strength; distortion of countenance, which changed from black to a deep lead colour. The eyes were sunk and their lustre lost; immediately on the accession of the disease, the pupil became dilated, and appeared as though the patient were dead. I have seen them fall down in the streets, faint, and often die forthwith!

“ The opium and calomel pills, as recommended by Dr. Tytler, were used at Calcutta, and certainly with benefit. I found it better to give the tincture of opium with calomel in a jelly, and some warm aromatic cordial immediately afterwards. But the ‘*Drogue Mere*,’ of which I send you the recipe, was the most beneficial of all remedies, and had an immense sale latterly. The vender and preparer was an old Spanish Padre (Dr. Minguet), with whom I was intimate, and who kindly furnished me with a specimen of the plant herewith transmitted. The dose of the medicine was a small wine glass full occasionally.

“ FORMULA.

“ R. Aloes - - - - - Oij;
 Myrrhæ - - - - - Oij;
 Gum. Olibani - - - - Oj;
 Croci - - - - - ℥iv;
 Herbæ justiciæ paniculatæ Oj;
 Aquæ vitæ - - - - - OL.
 Ft. infusio.

“ WILLIAM EVANS.

“ London, July, 1818.”

Some Remarks on the Climate and Situation of Nice, with Observations on the Temperature and Weather taken in the Winter of 1816 and Spring of 1817. By a Correspondent.

[From the *Annals of Philosophy*, for September 1818.]

(To Dr. Thomson.)

London, 1818.

SIR,

DURING a residence of some months last year at Nice, in a climate so superior to our own, it was an object of some interest to myself and party to make daily observations on the weather and temperature, with a view of comparing them with those which we received from time to time from our friends in England. Since my return home I thought it might be an object of sufficient utility, in some respects, to be worthy of a little time and trouble, to put my observations into some kind of order, by arranging those of the temperature taken at Nice and in England* together on a common synoptical scale, by which a comparison could be more readily made between the two climates in respect of the changeableness and difference of temperature. I regret much that I was not furnished with a barometer, that I might have added observations with that instrument also into my table.

The latitude of Nice is about $43\frac{1}{2}$ degrees north, or eight degrees south of London, and $7\frac{1}{4}$ degrees east of the same. The city, with its suburbs, is situated in, or rather surrounded by a rich plain, which may be about a mile and a half from east to west, and about two miles from north to the sea shore; it is bounded by a range of hills, which, beginning to the south east at the distance of about a quarter of a mile from the town, are continued as far round as the south west of various forms and gradations; and, like the successive benches in an amphitheatre, rise one above another until the snowy chain of the maritime Alps, about 8,000 or 10,000 feet high, appears like the boundary wall to the whole at a distance of about 25 or 30 miles. The

* The observations of the temperature in England which I have used in my scale are those of Luke Howard, as published in the *Annals*.

city is situated near the shore, which immediately faces the south; and the river Paglion, which takes its rise among the neighbouring mountains, after flowing through the plain, enters the sea near the city walls. The sea is remarkable for the beautiful blue colour it generally exhibits, probably arising partly from the absence of tides, by which its waters, being so little disturbed, become highly transparent. After rain, however, the limestone washings from the neighbouring mountains tinge its waters to a considerable distance off the mouths of the rivers, which sometimes have a curious appearance. The deep blue colour of this sea may also be owing to its depth, which is very considerable off this coast; according to the measurement of Saussure, taken about half a league off the Cape, between the ports of Nice and Villefranche, the depth was found to be 1,800 feet; it might also be observed by the great length of line used by the coral fishers who ply off this shore. Although little or no tide is perceptible in this sea, a southerly wind, or the approach of one, raises the ordinary level of the water some feet more or less upon this shore, and sometimes produces a very considerable surf. The sea breezes usually prevailed from about nine or ten, A. M. to four or five o'clock in the afternoon; and that was generally the case even when the upper current of wind came in quite a different direction. I remarked on one excursion to the summit of Mont Coa, about four miles north of Nice, that the sea breeze, which was felt so pleasant in the valley, did not prevail at that elevated station, about 2,000 feet. I occasionally observed, by the motion of the clouds, that the mistrale, or bise, (a north east wind so well known in Provence)* was passing over our heads, whilst the mild breeze from the sea was blowing upon us.

* This wind (styled one of "*les fléaux de la Provence*"), by which this part of France is so much visited, after passing over the High Alps and their immense snows and glaciers, takes its course with increasing violence towards the warm atmosphere of the Mediterranean; it is particularly violent in the valley of the Rhone. A friend of mine travelling from Avignon northward up this valley, while this wind was blowing with its usual fierceness, informed me that he did not appear to get clear of it until he had passed Lyons, although I found it still to prevail at Marseilles and Toulon for some days after. It is piercingly cold and dry, at the same time that it is violent, and in its course blows up the sand about the rivers and the limestone dust off the roads in

The sirocco, or south east wind, sometimes came on about sun-set in a brisk breeze, but at the same time with a mildness which at first quite surprised me; it was by no means relaxing, but very agreeable to the feelings; it generally ceased in the course of the night. The southerly winds sometimes blew with very sudden and rather violent squalls, which, however, commonly subsided in an hour or two.

The clearness of the atmosphere was very remarkable; the moon and the stars appeared very brilliant, and the lofty mountains of Corsica, with their snowy summits, were occasionally to be seen by the naked eye rising above the south eastern horizon at a direct distance of about 120 or 130 miles, (English); their forms were most remarkable a few minutes before sun-rise, sometimes presenting very perpendicular sides, and often varying greatly in their apparent outline from day to day. This mountainous island very rarely appeared unattended by clouds even on clear, bright days; their forms, I remarked; were generally *Cumuli* (owing no doubt to the coldness of the atmosphere over the snows of those mountains); these *Cumuli* about sun-set sometimes presented a grand and richly coloured mass towering above the horizon to an immense elevation, reflecting the sun's rays for some time after the sun had gone down.

The clouds which appeared in the field of our observation sometimes afforded much interest in a meteorological point of view. From the concave and sheltered situation of the plain of Nice, so directly exposed to the south, the temperature of the surface of this plain, as well as of the superincumbent atmosphere, is rendered more or less considerable, especially as the sun gets up towards the meridian. The temperature of the lower stratum of air being increased, and consequently rarefied,

vast clouds over the country, which is particularly the case about Marseilles, where on those roads there is so much traffic. It lasts in general several days, increasing in velocity and coldness as it seemed almost every hour. ("*Laissez-le*," said a native to me, with a significant shake of his head, in reply to my observation as this wind was coming on, that it was not so fierce as I was given to expect; and I had afterwards to remember his answer.) It is felt generally throughout Provence, particularly at Marseilles, and at Avignon, Montpellier, &c.

it is evident that the upper region of the atmosphere above us would also receive an increase of temperature, by the constant succession or supply of warmer air from the region below, which again (as it appeared) received its supply of cool air from the most open quarter, viz. from the sea. This sea breeze, as I have stated above, generally came on about nine or ten o'clock in the morning, by which time the sun was sufficiently elevated that its rays could bear upon the whole plain and sides of the hills with effect; the breeze generally increased till about two o'clock; and about sun-set subsided. This circulation, or ascending current of the warmer air, seemed to have at times considerable effect upon the clouds which happened to pass in our zenith, and which were not too elevated to be out of its influence. I have observed several instances of the atmosphere in the morning being quite overcast with clouds, and apparently (to an English eye) threatening rain, but which, about noon, became quite fine and clear; and in the afternoon the clouds, to my surprise, almost, and even wholly, to disappear (and this was not an uncommon occurrence). It was rare indeed during my stay there, that the sun was not to be seen and *felt* also in the middle of the day. In one instance a north westerly current brought up a quantity of clouds in detached *Cumuli*, which, when they had reached our zenith, were met by the sea breeze from S. E. which carried them all back, and in a short time disappeared. At other times they advanced to the summits of the neighbouring mountains, where they rested for the greater part of the day, assuming the *Cirrostratus* form. Thunder storms, I was informed, occurred very frequently in the summer, two or three times in the course of a week in the neighbourhood of the mountains, but that they seldom visited Nice (except at times during the spring). I had an opportunity of remarking this on the approach of a storm, one morning in the beginning of the summer.*

* Extract from daily observations respecting this on June 2:—"Fine day: observed some finely illuminated *Cumuli*, with dark *Cirri*, traversing their sides, rising up above the mountains to the north: as they rose to a certain elevation, their summits gave way, and spread, as if acted upon by a different state of electricity, into a *Cirri* form; at length, about noon, several collected in the north into a dark, heavy mass of thunder clouds, discharging

In this fine *Italian* sky, if so it may be called, the clouds, as a variety, often added much to the picturesque appearance of the landscape; it is not often, perhaps, that scenes are met with so beautiful and so highly picturesque of the kind as the north-east view of the town and rock of Nice, with the distant shores of France over the Bay of Antibes, about sun-set, and the reverse view, viz. from the ramparts of Antibes, of Nice, with the mountains that rise behind it in successive ranges, and the snows of the Col de Tende, &c. bounding the picture.

The mildness of this climate, and the sheltered situation of the country about Nice, render it a fine field for the lover of botany to follow his favourite pursuit, a subject which I regretted I knew so little about. It was, however, interesting to attend to the geography of plants, which the gradual elevation of ground from the shore to the summits of the mountains rendered very remarkable, particularly in some species.

On the fertile plain of Nice flourished the orange and lemon trees in gardens (of which there were above 60 different kinds);* also the date palm (*Phœnix dactylifera*), the pomegranate (*Punica Granatum*), the *Nerium Oleander*, the cypress, different kinds of geraniums, the sweet-scented *Verbena*, the myrtle, one of the *Gossypiums*, or cotton tree, the olive, the white mulberry (*Morus Alba*), which supply the silk worms, and many other trees and plants; and on the walls and rocks in warm situations, the *Cactus opuntia*, or Indian fig,

rain or hail over the mountains; the mass gradually approached our zenith although the wind with us was blowing in a direction contrary to it; but before it reached our zenith, it seemed to have fallen into a different atmospheric medium, and I observed it soon began to fold itself backward, and in an hour or two the whole seemed to be gone, or merely to leave behind some light *Cirri*."

* In a small publication, by Risso of Nice, of the different kinds of orange, lemon, and lime trees cultivated in the Dep. des Alpes Maritimes, he divides them as follows:

Species of the Orange (Orangers) - - - - -	19
—————Bitter ditto (Bigaradiers) - - - - -	11
—————Limetiers (Limes) - - - - -	7
—————Cedratiers (Cedrat) - - - - -	3.
—————Limoniers (Lemon) - - - - -	25

the caper shrub (*Capparis Spinosa*), the great aloe (*Agave Americana*), to be seen in some places ornamented with its stately flower 20 or 24 feet high. On ascending the hills a few hundred feet, but few of these were to be seen; the orange tree soon disappears; its region is very limited in distance from, and elevation above, the sea; with respect to the former two myriametres (about $11\frac{1}{2}$ miles) has been stated by Risso to be its limit. The olive region may be traced considerably higher up the hills, higher on their south sides than on the north; this region, as near as I can guess, does not much exceed in general 800 or 1,000 feet in elevation; its distance from the Mediterranean I found, when travelling northward from Marseilles, to be about 70 or 80 miles; it dwindles away to a mere bush between Avignon and Pont d'Esprit, about which place I lost sight of it. Above the olive region generally appeared the *Pinus Abies*, the *Pinus Sylvestris*, or Scotch fir, *Juniperus Communis*, the chesnut (*Castanea vesca*), &c.; upon this region the snow in winter sometimes fell, and remained for a longer or shorter period, according to circumstances.

Some attention to the geography of plants is useful in choosing a situation most advantageous for an invalid whose case requires a warm climate; thus the olive and orange trees may serve as useful subjects in this respect for the south of France. About Aix and Nismes the olive is but a humble, lean-looking bush, or standard, from about four to 10 or 12 feet high, requiring the use of the pruning knife to bring it into condition for a crop every other year: at Marseilles it increases in stature, appearing as a small tree; at Nice it becomes a fine thick tree, about 20 or 30 feet in height, bearing annually, and apparently but seldom pruned; and about two miles to the east of Nice, near the town of Villefranche, a situation peculiarly sheltered and exposed to the south, this tree appears to great perfection, and affords an excellent, hard, and close-grained timber, which is a good deal worked by the cabinet-makers and carpenters at Nice. Again, the orange tree flourishes and brings its fruit to perfection in the plain of Nice (some few of them under shelter of Mont Cimiez I should guess were from 25 to 30 feet high); the fruit is still finer in flavour and earlier

matured at Villefranche; the tree is also well cultivated and in high perfection at Hyeres, though I understand that at Toulon, about nine miles only distant, it requires the shelter of a wall, and at Marseilles the shelter of a green house in winter. And even in the neighbourhood of Nice, it might in the same manner be observed, that some situations were much more eligible than others in point of shelter and warmth, though not so evident at first sight. After a visit by a very cold, bleak, and violent mistrale in the month called April, its mischievous effects were very observable upon the tender vine shoots as well as upon the young green leaves of the mulberry trees, in shrivelling them as if they had been burned, leaving but a poor prospect for the next vintage, and throwing back considerably the ensuing crop of silk. I observed these effects particularly between Antibes and the valley of the Var; also in many situations in the valleys about Nice, which ran north and south; but in other places on the south sides of the hills, the mulberry trees mostly escaped uninjured, and in some instances were to be seen in a flourishing state at a little distance from others which were blasted, but which had not been so protected. The most protected situation about Nice appeared to me to be the south side of Mont Cimiez, or the plain between it and the shore, which includes the *Croix de Marbre*, a quarter the most frequented by the English. Villefranche is undoubtedly a warmer and more sheltered spot, but it is a place not to be compared to Nice for accommodations, or even the necessities of life, at which place the now frequent visits of our country-men for the benefit of the climate have afforded the inhabitants the opportunity of learning English wants and comforts. With respect to our consumptive patients visiting so distant a spot for the benefit of the climate, it appeared clear, that unless they decide to go there at such an early stage of the disease, when they are able to take the air and exercise which this fine climate allows of with so little interruption, the experiment would seldom prove successful. The journey itself, of 800 or 1,000 miles, although alleviated by a safe and easy water conveyance from Chalons to Avignon, is of itself a heavy, and it may be a painful toil to inflict upon the sufferer; yet the earlier the decision is made, the greater appears to be the probability

or certainty of success, or recovery. I hope I may be excused for thus deviating a little from the original subject of this communication; but I am led to do so by the hope of dropping a hint or two that might be at all useful to any concerned, or likely to be concerned, with the subject.

On Mental Alienation. (From the Dictionnaire des Sciences Medicales.)

[From the London Medical and Physical Journal, for December 1818]

A natural reflection arises from the general consideration of the different modes of treatment that have been adopted by the ancients and moderns: it is, that the idea of a pretended specific, at least if it be not founded on an extensive series of well-determined facts, leads on this subject, as in many others, to a blind empiricism and a continual vacillation of opinions. The ancients, although accurate observers, drew general conclusions from a too-confined number of particular facts; and, referring the seat of the disease to the digestive organs, they believed the only means to be employed, in all cases, were drastic purgatives. The greater number of moderns, on the contrary, have only regarded the alienation as a consequence of too great an afflux of blood to the head, and have merely advised a repetition of frequent blood-letting, and the application of cold water to the head. Other physicians have considered it as a purely nervous or spasmodic disease, and have had recourse to anodynes and sedatives exclusively. But a judicious application of the medical art, in a large assemblage of patients of this class, shows us that these are only modes of treatment relating to the different circumstances which have produced or encouraged the malady, and the individual constitution, age, &c. of the patient.

The manner of directing a hospital of lunatics, with respect to the rules of hygiene, is subjected to the general rules which are common to it with that for the general assemblage for infirmities; but there are some indications which are pecu-

liar to it, naturally arising from its particular application: as, in the first place, a spacious local residence divided into numerous apartments; a pure and salubrious air, that may be made to circulate freely through all the different cells; and sometimes a necessity for disinfecting them by means of fumigations of muriatic acid: the impression of cold air is dangerous in the decline of a paroxysm; the use of mucilaginous decoctions acidulated, or emulsions; during the state of agitation and violence of mania, or on its decline, the exhibition of gentle laxative medicines, alternately with a light bitter tonic infusion; in general, a substantial nourishment, but principally composed of vegetable substances; autumn and summer fruits are not less useful for maniacs than for melancholics; not to condemn to inaction any but the violent or dangerous maniac, and to permit him to use his limbs as soon as he is no longer extravagant, or the violence of the paroxysm has subsided. Does he become convalescent?—to apply him to some sort of occupation adapted to his inclination; to occupy women with needle-work, and the men with some mechanic labour, or gymnastic or rural exercise; and, in some cases, to favour certain natural secretions or excretions, according to the particular cause which has determined the production of the malady, or to produce some preternatural evacuation. The moral and physical treatment will also require to be modified according to the different periods of mania.

In the first period,—is the patient in a state of extreme agitation?—let him be confined in an obscure chamber, to avoid the impression of light, and all objects tending to produce excitement; and to indulge his inclination for cooling and acidulated drinks. He often, then, experiences at intervals a great voracity, when an abundant quantity of nourishment should be allowed him. When the violence of the paroxysm diminishes, and it will be no longer dangerous to himself or others, he may have the liberty to use exercise in a confined space, his motions being in some degree restrained by a strait-waistcoat. This is, then, merely a sort of *medecine expectante*, aided by a mild diet proportioned to the appetite; a careful superintendence of his actions, regularity of attendance on him, and a sort of harmony between all the objects conducive to health. I

revere the ancients, I admire their supreme sagacity in the art of observation; but I may also be allowed to be guided by the results of more than twenty years' experience on extensive assemblages of patients, which has led me to confine to certain particular cases the use of emeto-cathartics, hellebore, gratiola, sternutatories, repeated blood-letting, sudden immersion in cold water, so blindly and servilely adopted, without restriction, by some modern physicians.

On the decline of the disease, greater liberty of movements may be gradually permitted, and patients may be drawn from a state of fury and violence, by having recourse, at intervals, to a variety of gentle measures,—as, tepid baths two or three times a week; the occasional use of laxative and acidulated drinks; gentle dashing of cold water on the head, and this only towards the end of the time at which they remain in the bath, and for a few minutes; all the resources of moral regimen; testimonies of kindness and affection; condescension to all his little whims, and a careful evasion of his indiscreet demands; acts of violence, or even offensive commands, should never be employed, but a regular, firm, imposing style of conduct, whenever the patient assumes an authoritative tone or becomes unruly.

The general views which have been displayed of the mode of treatment for lunatics, may be modified by the particular circumstances of the determining cause, the individual constitution, the mode of life, and the various complications of the malady. If it have been preceded by the repulsion of some cutaneous disease, or of gout, these disorders should be recalled to their original seat by irritative frictions, blisters, and setons, joining with these external means, antimonials, sudorifics, sulphureous waters, &c. Should the disorder appear during pregnancy, we must patiently wait for the termination of this state. Does it take place after childbirth?—constant experience teaches us the advantage to be derived from evacuants in the first instance, followed by the application of a vesicatory to the neck. A plethoric state of the system, or the suppression of some hæmorrhage, may render bleeding necessary, but not a frequent repetition of it, which may plunge the patient into a state of incurable folly; but local abstraction of blood by

leeches applied to the inferior extremities, sometimes to the anus, to the vulva, or to the head, according as a suppression of an hæmorrhoidal evacuation, a periodical flux, or the preludes of cerebral congestion, may have been remarked.

A lunatic subject to spasms, should be treated in some degree with anodynes and sedatives: a state of atony and stupor demands, on the contrary, the use of stimulants and tonics. We have previous indications for the mode of treatment when insanity is determined by a wound of the head, disappointed or rejected affections, a forced state of celibacy, difficult dentition, habitual insomnium, a state of extreme distress, &c. Is it not curious to see a physician seek his means of cure, in these cases, in pharmacy?—PINEL.

SELECTED REVIEWS.

Memoir on the Membrana Pupillaris, and on the formation of the Arterial circle of the iris. Read before the Royal Academy of Sciences, at their meeting. July 6th, 1818, by JULIUS CLOQUET, M. D. late House Surgeon of the Civil Hospitals of Paris, Dissector to the Medical Faculty, Professor of Anatomy, Physiology and Surgery. 8vo. with a plate. Paris, Méquignon-Marvis.*

[Translated for the Eclectic Repertory, from the *Nouveau Journal de Medecine* of Paris, for August 1818.]

It were desirable that anatomists should be particularly engaged in the study of certain points in the science, on which our information is imperfect, and often contradictory. How much remains to be ascertained respecting the internal structure of many organs; the uses, the functions, the nature of many others; the existence of some, as the exhalant vessels admitted by Bichat; the excretory ducts of the lachrymal gland, observed by a few certain vascular and nervous communications inferred to exist rather from reasoning than from ocular demonstration? The successive changes the organs undergo in their structure, are not these the proper objects of attention; may they not contribute to explain various physiological phenomena still enveloped in the most profound obscurity? It is with the view of filling up the void, and of fixing our ideas respecting the *membrana pupillaris*, that M. Juli-

* Eight days after this memoir was read to the Academy of Sciences, Doctor Portal read a note on the same subject. I am ignorant, states M. Cloquet, whether the facts it contains bear any analogy to those I have offered; I notice this circumstance, lest I should be charged with plagiarism if my opinions and those of the learned professor should be found to resemble each other. In the course of this memoir I shall advert to the opinions which are contained in Dr. Portal's printed works.

us Cloquet engaged in a variety of researches on the situation and structure of the membrane, on the phenomena of its rupture, &c. We shall merely give an analysis of the memoir, and notice the principal results which he observed, and which he quickly communicated to the Royal Academy of Sciences. This analysis we trust will excuse us from offering the commendations which the work of our colleague so justly merits.

The pupil, or aperture of the iris, which in the adult by its dilatation and contraction regulates the quantity of light which ought to enter the eye, is not fully developed in the fœtus, during a certain period of gestation. It is then closed by a very delicate membrane, which was discovered in 1738, by Wachendorf. This anatomist denominated it the *membrana pupillaris*. Albinus, who claimed this discovery, Haller who decided the question in favour of Wachendorf, Zinn, Ræderer, &c. have likewise mentioned this membranous production, but have not described it with sufficient accuracy. Sabatier merely notices it. Wrisberg and the preceding writers ascribe to it a vascular structure. Bichat and several others, on the contrary, assert that it is totally unprovided with vessels; moreover, some authors of no less celebrity have doubted its existence.

M. Cloquet has uniformly found the *membrana pupillaris* in the human fœtus, usually about the seventh month, after which period it disappears; sometimes it is even ruptured at the sixth, it is seldom found entire at the eighth. Only on one occasion did he discover it in a full grown fœtus, and then it was broken in the middle.

While the *membrana pupillaris* is entire, it forms with the iris a complete partition which separates the two chambers of the eye and prevents any communication between them. Like the iris it is flat, and appears more tense, as it approaches the period of its rupture. It is fixed to the whole circumference of the pupil and extends itself particularly on the anterior surface of the iris. It presents no opening in its natural state; in front it is directed towards the anterior chamber; behind, to the posterior chamber and to the crystalline lens.

The *membrana pupillaris* is transparent and colourless. Wachendorf had observed that it had a grey or blackish tint

more or less intense. M. Cloquet discovered that this colour was not inherent, but was owing to a portion of the pigmentum nigrum of the posterior surface of the iris, dissolved in the fluid of the posterior chamber by an incipient putrefaction. This pigment, dissolved in the aqueous humour, colours all the parts it comes in contact with. Wrisberg, who examined a great number of membranæ pupillares, never remarked this colouring.

The membrana pupillaris is supplied with blood vessels, visible by the naked eye. Its tenacity is such, that it is broken by the slightest force, and the greatest care is required to preserve it entire. In the fœtus of three or four months, it is flaccid, white, as it were plaited, and the vessels are not well defined. The existence of the membrana pupillaris cannot be discovered before the end of the third, or the beginning of the fourth month. Antecedent to this, the eye is so soft, that it is impossible to prepare it. At the fifth month, the vessels are conspicuous, and its existence unequivocal.

Organization. The membrana pupillaris is evidently composed of two laminæ, very thin, diaphanous, and in close contact. The posterior one belongs to the corresponding chamber of the eye, and arises from the edge of the pupil. The anterior is a continuation of the membrane of the aqueous humour, lining the posterior surface of the transparent cornea to which it is intimately united. It is reflected over the anterior surface of the iris, and closes the pupil while it adheres to the posterior lamina. From this arrangement it is obvious, that the membrane of the aqueous humour performs the office of a serous membrane, forming a sac without any opening. The humour filling it is abundant and very limpid.* The existence of the aqueous humour in the anterior chamber of the eye, previous to the destruction of the membrane closing the

* This humour which uniformly fills the anterior chamber of the eye, previous to the rupture of the membrana pupillaris, has been examined by M. Cloquet, and in all its habitudes with the reagents was found analogous to the fluid taken from the eye of an adult. This observation proves that the membrane of the aqueous humour is the proper secretory organ of this fluid, and that this organ does not exclusively exist in the posterior chamber, as has been asserted.

pupil, may be determined by various processes. First, by dividing the cornea with a lancet. Second, by opening the eye in the posterior part as will be pointed out. Third, and lastly, by freezing the eyes of aborted children. In the last instance, there is found in the anterior chamber a portion of ice convex in front, and presenting a plane surface posteriorly, and what is remarkable, the membrana pupillaris has not been destroyed.

The posterior chamber of the eye, at the period when the membrana pupillaris is perfect, is filled with a very limpid serous fluid, which runs out immediately as the cavity is opened. M. Cloquet is of opinion that it is similar to that contained in the anterior chamber.

Examined by the microscope, the membrana pupillaris presents no distinct fibres, but appears to be composed of a transparent, homogenous and gelatinous like substance. The two lamina are so adherent, that they seem to form but a single layer, in most cases. Nevertheless this separation is very evident in some particular instances.

The two layers of the membrana pupillaris are separated by blood-vessels, which are very distinct when injected with blood. Under these circumstances the examination is very satisfactory; at other times they are empty, colourless, and not to be discerned, unless we have recourse to desiccation.

The vessels of the membrana pupillaris are easily distended by various kinds of injections; they are however sometimes ruptured at the edge of the pupil, the injected matter is extravasated between the two layers of the membrane, imparting the colour and opacity, excepting where the vessels exist, which, remaining empty, appear like transparent striæ. In this state, the two layers of the membrana pupillaris can be easily distinguished by the microscope. When this extravasation occurs, the injected fluid does not cover the vessels on the anterior and posterior surfaces, and this is owing to the firm adherence of their surfaces to the corresponding surfaces of the two lamina, which are not detached at their edges.

We must be acquainted with the arrangement of the vessels of the membrana pupillaris, to comprehend the nature of the rupture.

The two long ciliary arteries given off from the ophthalmic

pass between the sclerotica and the choroides as far as the ciliary ligaments. Here each divides into two branches which go off at an obtuse angle, and advances towards the circumference of the iris, when they anastomose and form an arterial circle corresponding to this circumference. From this circle, supplied likewise from the anterior ciliary arteries, there are given off thirty or forty tortuous branches like radii, covering the anterior surface of the iris, and directed towards the pupil. In the adult these vessels are observed to divide into a number of branches, which, again uniting, constitute a smaller circle near the pupil, and from which arise capillary vessels going to this opening.

In the fœtus a different distribution is observable, previous to the rupture of the membrana pupillaris. The smaller arterial circle does not exist, and the branches arising from the greater circle, instead of terminating near the edge of the pupil, and forming the smaller circle as in the adult, are elongated between the layers of the membrane that closes the pupil. They proceed to the centre of this opening, forming very tortuous arches of various size and figure where the concavity corresponds with the edge of the pupil. They do not form a regular net-work as in the majority of the membranous textures, but in their tortuous disposition they resemble the vasa vorticosa of the choroides, or rather the vessels found in the pseudo membranes.

The vascular arches of the membrana pupillaris are very numerous; they do not anastomose with those directly opposite, but with those on their side; from this curious disposition there is formed, between the convexity of these arches towards the centre of the pupil, an irregular space, where the membrane is not supplied with vessels, and consequently much weaker than elsewhere.

M. Cloquet counted thirty or forty principal arterial branches, extending beyond the iris into the membrana pupillaris. Sometimes only eighteen or twenty can be discovered.

When thin vessels are distended with blood, or injected with any colouring matter, they are easily discerned through the transparent cornea; particularly when the eye is viewed against the light.

M. Cloquet did not discover any veins among these vessels. He never perceived that the injection filled them and the arteries, as happens often in other parts of the body.

Wrisberg states that he observed branches from the central artery of the crystalline, passing to the posterior surface of the membrana pupillaris. This anatomist infers that there is always a communication between the crystalline lens and the membrane closing the pupil. M. Cloquet, notwithstanding the most careful examination, could never discover these vessels.

Our colleague describes the different modes of preparation by which he was the most successful in ascertaining the structure of the membrana pupillaris. He preferred fœtuses of from five to seven months; as recent as possible, because the membrana pupillaris is soon destroyed by the kind of maceration it undergoes in the humours of the eye. He removes the whole organ carefully, he makes a circular incision through the sclerotica about one third of the distance from the union with the cornea; he then divides the choroides and retina, and separates the posterior portions of these membranes, preserving the vitreous humour entire. By placing the eye on a piece of white paper, the vessels of the membrana pupillaris can be easily distinguished, especially if they are injected. The vitreous humour and crystalline lens adhering to the hyaloid membrane, are to be carefully removed, the anterior portion of the choroides, and the iris remain united to the sclerotica, near the circumference of the cornea. In this way the membrana pupillaris is seen on its posterior surface, and the vessels may be discovered with the naked eye. The membrana pupillaris and the iris are raised by the aqueous humour contained in the anterior chamber, closed on all sides. By carefully dividing the membrana pupillaris; or, still better, by detaching the circumference of the iris, the aqueous humour is discharged, which may be then collected and examined.

This humour being evacuated, if air be blown into the anterior chamber, by means of a blow-pipe, the iris and membrana pupillaris will be raised, forming an elevation posteriorly. Then, with the point of a lancet, the iris is to be detached from the sclerotica and immersed in water, when the arrangement

of the membrana pupillaris will be distinctly seen. By seizing the iris with the forceps and agitating it in the water, the membrana pupillaris will be made to undulate from side to side according to the impulse it receives from the water. This membrane may be rendered still more distinct by steeping it in ink, which gives it a black colour.

M. Cloquet then gives the result of his experiments with injections of water, isinglass, spirits of turpentine, varnish, &c. for the purpose of rendering visible the vessels of this membrane. He describes the ingenious methods he adopted in making these injections, and in preserving the membrane. He remarks, that it is very difficult, if not impossible, to avoid destroying this membrane, in attempting to show it, if the opening is made in the transparent cornea, which is very thick in the fœtus. We acknowledge that we searched in vain for the membrane, by pursuing this last method, whence we were led to doubt its existence, whereas we have exhibited it without difficulty by pursuing the mode recommended by our author.

The membrana pupillaris does not remain entire during the whole period of pregnancy. Generally about the seventh, sometimes however about the sixth or eighth month, it is destroyed, so that no vestige remains at birth. How is the membrane removed? what is the cause of its disappearing? what becomes of it and the vessels with which it is so abundantly supplied? To resolve these questions, M. Cloquet has detailed the phenomena he observed connected with the rupture of the membrana pupillaris.

Towards the above mentioned period of gestation this membrane is unequally divided about the centre; a free communication is thus established between the two chambers of the eye, which were previously quite distinct, and the contained fluids become mixed. The rupture commences near the centre of the pupil, in the spot where the convex edges of the vascular arches are directed towards each other, and thence extends into the primary intervening spaces, the vessels remaining untouched. The membrane is not destroyed in the secondary spaces formed by each arch, for the filaments are fixed round

the pupil by one edge, the other portion being loose and floating.

The vascular arches remain connected with their filaments; they have not been broken, but being shortened, they are drawn from the centre of the pupil; they gradually diminish in size, and are finally confined to the edge of the pupil, constituting the smaller arterial circle of the iris, which had no existence previous to the rupture of the *membrana pupillaris*, and whose formation we are thus enabled to trace.

In the fœtus, the smaller arterial circle of the iris, which is only formed after the rupture of the *membrana pupillaris*, at the expense of its vessels, and which may therefore be termed pupillary, is situated on the border of the pupil. Frequently, in a new-born child, some of these vessels extend beyond the circumference of this opening; in the adult on the contrary, it is situated on the anterior surface of the iris, at some distance from its central opening.

Our author has examined, in a great number of fœtuses, the degrees of retraction of the arterial arches of the *membrana pupillaris*; he has observed that these vessels are nearer to the edge of the pupil in proportion as the period approaches birth. These vessels of the *membrana pupillaris*, form in part the coloured arches, observable towards the smaller circumference of the iris in adults, and which have been described by Haller, Ruisch, and Zinn.

From the facts above stated, and which we have witnessed a great many times, M. Cloquet considers himself warranted in establishing the following propositions. We shall present them in his own words.

“1. The *membrana pupillaris* uniformly exists in the human fœtus, and generally remains perfect until the seventh month of gestation. Sometimes it is destroyed earlier, seldom at a later period. It can be discerned at the third month.*

“2. This membrane, previous to its rupture, forms within

* Dr. Portal is of opinion that the *membrana pupillaris* exists at birth. “Children, (says he,) when coming into the world have the pupil closed by a membrane so delicate, that it is ruptured in the delivery, or soon after birth.” *Anat. Med.* tom. IV. p. 426.

the iris a complete partition between the two chambers of the eye.

“3. The anterior chamber of the eye, before the destruction of the membrana pupillaris, constitutes a closed cavity lined with a serous membrane (the membrane of the aqueous humour) which secretes and incloses the aqueous humour.

“4. The posterior chamber, being very small, contains at the same period a limpid serous fluid, but in much less quantity.

“5. The membrana pupillaris is formed of two lamina with numerous blood vessels running between.

“6. These vessels are supplied from branches of the long ciliary arteries, which extend beyond the opening of the iris, forming tortuous arches between the lamina of the membrana pupillaris.

“7. These vascular arches do not anastomose, at their convex portions, with those directly opposite; there consequently remains, towards the centre of the pupil, a space where the membrana pupillaris is unsupplied with vessels and therefore weaker.

“8. The destruction of the membrana pupillaris is neither to be attributed to its maceration in the humours of the eye, nor to mere absorption; for after its rupture the floating filaments and vessels are always distinctly seen.

“9. From the facts I have observed and which are recorded in this memoir, I think it must be admitted, that the rupture of the membrana pupillaris is owing to the retraction of the vascular arches, which retire towards the smaller circumference of the iris, receding from each other and consequently from the centre of the pupil. It is possible likewise that the iris, by its contractions, co-operates in the rupture of the membrane which closes its opening.*

* The membrana pupillaris (observes the author,) being torn in the middle, where it is thin, and not supplied with vessels, no hemorrhage can occur. But how shall we explain the retraction of the vessels so as to occasion the rupture of this membrane to which they adhere so strongly? what is the proximate cause of this phenomenon? It would be attempting to explain the reason, why, at a certain period, and in the fœtus likewise, the gubernaculum testis, by contracting, draws down the testicle from the abdomen

"10. The small arterial circle of the iris does not exist in the fœtus previous to the rupture of the membrana pupillaris; it is formed by the vessels of this membrane which have receded towards the iris without having experienced the smallest laceration.

"11. The small arterial circle of the iris, situated on the edge of the pupil in the fœtus, recedes on the anterior surface of the iris in the adult.

"12. The looseness of the anastomosing arches of the small circle of the iris is favourable to the dilatation and contraction of the pupil."

M. Cloquet has twice observed in the membrana pupillaris, very delicate vascular ramifications uniting opposite arches. In these instances they must have been destroyed by the rupture of the membrane. "Perhaps such an anatomical structure, he remarks, has prevented the rupture of this membrane in some of the individuals blind from birth: this hypothesis seems confirmed by an observation from Wrisberg, where the membrana pupillaris was found in a child who died of the small-pox, at the age of three years and a half." This anatomist, desirous of ascertaining the cause of the blindness, injected the dead body. The colour of the pupil was paler than natural: nevertheless it was not so remarkable as in persons affected with cataract; but resembling rather what is observable in the eyes of aborted children. Besides this paleness there were discovered some very delicate vessels passing across the pupil. Wrisberg removed the cornea, and perceived the iris

into the scrotum and causes the production of the cremaster muscle and the spermatic cord. (Vid. the *Anatom. Researches* of the author, on *Hernia*. July 1817. printed by Mequignon-Marvis.

Professor Portal states, in treating of the membrana pupillaris, "Generally this membrane is ruptured the moment the child is born; in some children it is not so easily broken, but remains after birth." He puts the question, whether we may not discover the cause of this rupture in the greater afflux of the aqueous humour, or in the motions of the eye, which are more considerable and more frequent after birth? Do not the contractions of the recti and obliqui, he states, by compressing the globe of the eye, occasion the rupture of this delicate reticular membrane. (*Cours d'Anat. Med.* tom. V. 581. The opinion of this physician is opposed to the observations of Haller, Albinus, Wrisberg, and lastly those of Cloquet.

continued into the membrana pupillaris, the vessels of which were filled with injection. This membrane, being rather firmer in the parts supporting the vessels, was in all respects analogous to the membrana pupillaris in the fœtus. Littre exhibited to the Academy of Sciences, in 1707, the eye of a man aged twenty-two years, whose pupil was closed by a delicate slightly opaque membrane, which was attached to the whole circumference.

It may likewise happen, that though the membrana pupillaris is broken yet the filaments do not completely recede to the edge of the pupil. Doctor Beclard, at the head of the Anatomical Department of the Faculty of Medicine, has informed us and the author, that he had observed in two adults irregular filaments of the membrana pupillaris which partially concealed the opening in the iris, and rendered vision indistinct.

M. Cloquet has promised shortly to publish his observations on the membrana pupillaris of brutes.

He has presented to the Academy of Sciences eleven preparations of the membrana pupillaris of the human fœtus, and has given, at the end of his memoir, the description of these specimens which he kindly permitted us to examine, and which he proposes to deposit in the collection of the Medical Faculty. He has added to his memoir a lithographic print executed from nature, and which gives a very perfect idea of the preparations which we examined.

Observations on Phagedæna Gangrænosa. By H. HOME
BLACKADDER, Surgeon.

[From the London Medical and Physical Journal, for September 1818.]

IN a preface, Mr. Blackadder makes some remarks on the importance of the subject of his work; and deprecates the prejudice in favour of the paramount and almost exclusive importance many surgeons of the present day are disposed to attach to the daring parts of operative surgery; but while he is willing to allow that such subjects are in themselves not

without interest, he is still inclined to believe that they are most fitly ranked with the monstrosities of nature; and that they are calculated to attract attention, rather from their singularity, than from any great or general advantages to be derived from them. The one shows what Nature can sometimes do of herself; the other, what injuries she can put up with from the hand of man; and, doubtless, both are objects of laudable curiosity. "But who," continues Mr. B. "could wish to see his art come to that pass, when only such credentials as contain a list of the number of carotid arteries, hip-joints, &c. he has operated upon, are considered valid for the reception of a surgeon into the confidence of the public?" This reminds us of a sentiment of Mr. Hunter. He said, he never approached a patient to perform an operation, without feeling humiliated; it was like the means a savage employs to accomplish his ends; what a man of a cultivated mind would execute with ease and gentleness, is by him done with force and violence. How peculiarly expressive is this, coming from such a man as Mr. Hunter. It speaks more than all the volumes that have been written on the advantages of science, and the beauty of modesty. It is itself a code of professional morals, and the *τό καλόν* at which we all should aim.

The observations contained in this work, Mr. Blackadder states, were arranged as early as the year 1814, with the intention of having them inserted in a periodical publication; but a circumstance withdrew his attention from the subject, and, till a short time since, he wanted leisure or opportunity for again reverting to it.

"Phagedæna, or Phagedenic Ulcer," the author says, "is a term which has long been in use with writers on surgery, in treating of the history and cure of ulcers; and has been employed to designate those foul and irritable sores which exhibit a constant disposition to spread or enlarge; and which, in their progress, are frequently marked by an evident loss of substance. By modern writers, its application has been more restricted; being generally confined to those spreading ulcers which are not confined to any one texture, but which most commonly have their site in the integuments and cellular substance."

He proposes an arrangement of this kind of ulcer into the following species:—*Simplex*, *Cachectica*, *Venerea*, *Hydrargyrosa*, *Herpetica*, *Cancrosa* and *Gangrænosa*. This arrangement is obviously imperfect, which the author admits, and it is also in other respects objectionable; but, as he purposes to treat on the last species only, we do not think it necessary for us to make any particular remarks on it.

This work is divided into two parts. The first, containing the history and cure of the disease, deduced from his own observation and experience; the second, an investigation into the history and treatment of it, as it is to be found in the writings of various ancient and modern authors.

“Phagedæna gangrænosa,” says the author, “is the name by which I mean to designate that disease which, in this country, is usually denominated hospital gangrene, and which is familiarly known to the French surgeons under the appellation of “*la gangrene humide des hôpitaux*.” It has also been taken notice of by different writers under various other names; such as the putrid, scorbutic, contagious, malignant, gangrenous ulcer, hospital sore, *pourriture d’hôpital*, &c.

He apologises for making use of a new term; but considers that, if the view he has taken of this affection be correct, it was no less requisite than allowable. That which he has adopted is strictly proper, as expressing the principal characteristics of the disease. After some general observations on the rapid progress, extensive ravages, and fatal tendency of this malady, Mr. Blackadder proceeds to give an account of Passages, a small sea-port town of Guipuscoa, in the province of Biscay, where he first became acquainted with it. Passages is situated on the side of an inlet from the sea, which is surrounded by high hills; and, from an entrance extremely narrow, it extends to the distance of about three-quarters of a mile, and terminates in a large natural basin, from which the rising grounds gradually recede. This basin, though now nearly choked up with mud, was once a principal rendezvous for the Spanish navy. The long narrow street, or lane, of which the town principally consists, had been originally cut out of the basis of a hill. In several places, it lies so low as to be on a level with the sea at high-

water mark. The population had usually been from about sixteen to eighteen hundred; but, after the destruction of St. Sebastian, the number of inhabitants, including the British army, amounted to seven thousand. The town was so completely filled up, that the cellars, stables, and even the arch-ways, were, during the night, promiscuously occupied by men, boys, mules, and horses. The climate, during winter, is cold, moist, and changeable. During that in which the town was occupied by the British troops, it rained almost incessantly. The thermometer was seldom higher than 55° , and less frequently so low as 32° . Fuel was extremely scarce. From this town being in the immediate rear of our army, and affording the accommodation of a convenient harbour, it became the place at which all reinforcements were landed, and to which such of the sick and wounded, as were likely to require a considerable time before they could be fit for active service, were sent.

Mr. Blackadder was, in November 1813, appointed resident medical officer of a division-hospital in this place. About this period, three patients were admitted with simple flesh-wounds of the lower extremities. They were young, healthy, stout-looking men, and were able to walk about without experiencing much inconvenience. He remarked, on removing the dressings from their wounds, that the nature of the discharge, and the general appearance of the sores, were somewhat different from any thing he had before witnessed. This proved to be the commencement of hospital gangrene. He says,

“Upon laying these cases before Mr. Baxter, (surgeon to the Forces,) I soon learned that I had to attend a disease with which I was practically, and, in a great measure, theoretically ignorant. I had also the mortification to learn that it had made extensive ravages in other hospitals, that medical officers were much divided in opinion, both with regard to its nature and method of treatment.”

He was instructed to use a lotion, composed of nitrate of potash dissolved in vinegar, which was to be kept constantly applied to the sores. This application, which was continued for three days, occasioned violent pain, while the disease was

in no degree arrested in its progress; but, owing to the removal of these patients to another hospital, he was prevented any longer watching the progress of their complaint. About three weeks after these patients were sent away, a number of men were admitted, most of whom had been recently and severely wounded. It was discovered that four of them were affected with gangrenous phagedæna; and according to their own account, their wounds had been in that state from six to ten days previous to their admission into this hospital. From these cases, the disease was communicated to every ward in the hospital; and, in less than two weeks, a great proportion of the open sores had become affected with it.

Every known means, every thing that was likely to prove beneficial, was had recourse to. In some cases it was attacked through the medium of the general system, in others by topical applications; but with equal want of success. The state of the sufferers is described by Mr. Blackadder in a manner which evinces his sympathy with them, and the exertions he made for their relief; and the line of conduct that should be adopted by medical attendants in such circumstances is traced with much judgment, spirit, and decision. Seeing that all the measures hitherto employed hardly even mitigated the disease, he says, "It appeared that the only way of arriving at a more effectual method of treatment, would be still more carefully and minutely to watch the progress of the complaint through its different stages, and thereby endeavour to acquire a more intimate knowledge of its character." By these means he at length became satisfied of the truth of the following particulars:

"1. That the morbid action could almost always be detected in the wound, or sore, previous to the occurrence of any constitutional affection.

"2. That the constitution did not, in several instances, become affected, until some considerable time after the disease had manifested itself in the sore.

"3. That, when the disease was situated on the inferior extremities, the lymphatic vessels, and glands in the groin, were observed to be in a state of irritation; giving pain on

pressure; and were sometimes enlarged before the constitution showed evident marks of derangement.

“ 4. That the constitutional affection, though sometimes irregular, was in many cases contemporary with the second, or inflammatory stage.

“ 5. That all parts of the body were equally liable to become affected with this disease.

“ 6. That, when a patient had more than one wound, or sore, it frequently happened that the disease was confined to one of the sores, while the other remained perfectly healthy; and that, even when they were at no great distance from each other.”

The first of the above series of observations differs from what has been related by some writers on this disease. Professor Brugmans, of Leyden, in a Memoir, which obtained the prize given by the Society of Sciences at Haarlem in 1814,* says, “ Before any change in the wound is perceptible, the patient complains, sometimes a few hours after entering the hospital, of a most disagreeable sensation throughout the whole body, but particularly in the arms and legs; lowness of spirits, and disinclination for food follow; the tongue is dry, and frequently covered with a yellowish coat; the thirst is inconsiderable when the appetite ceases; the pulse becomes unequal, small, and accelerated.”—Moreau also absolutely asserts, that the constitutional symptoms precede the local; and so does Mr. John Bell, in his Principles of Surgery. It is difficult to discover, from the writings of the greater number of the French surgeons, what opinion they held respecting the order in which the symptoms occur. They, however, in general, agree in this—that topical management is of the first importance in checking the progress of the local disease.

Mr. Hennen, when treating on hospital gangrene, in his work on Military Surgery, says, “ I have reason to suppose that the sloughing, in some cases, preceded the fever; but in all the others, as nearly as could be traced by attentive inspection of the sores, both appeared at the same time.” (P. 253.) In another place he states, that “ some had extensive

*. Inserted in the 34th volume of our Journal.

local disease without any general affection. These cases I have principally observed to occur from the inoculated slough, among the attendants, who occasionally respired a purer air than the patients; and among the assistants, whose accidental scratches were best treated by destroying the part with nitrated silver.”—“The slightest scratch of the dissecting knife festered; ulcers, whether simple or constitutional, became gangrenous; wounds, long healed, broke up; nay, the skin, although perfectly sound, which had been touched with a sponge employed in washing the gangrenous sores, ulcerated, and soon became itself a slough. This was observable among the orderlies and nurses.”

Professor Brugmans states, that, in the year 1799, a quantity of lint was purchased in France, to be distributed in the various hospitals of Holland. Wherever it was used in dressing ulcers, a very violent hospital gangrene was the consequence. The fact was inquired into, and it was found that, in the place from which the lint had been brought, they were in the habit of washing the bandages, and other articles used in hospitals, in order to arrange them, and sell them as new lint. Pelletan states, that he saw the disease thus disseminated; and Pouteau, that it has been manifested frequently in patients by the application of surgical instruments which had touched an ulcer infected with it.

From the above-mentioned facts, and from that contained in the sixth of the series of observations of Mr. Blackadder, which is confirmed by the testimony of Professor Brugmans, Dr. Rollo, and Mr. Hennen, it is evident that gangrenous phagedæna arises from a specific morbid poison, and that constitutional derangement is not necessarily connected with it; consequently, that the first-mentioned observation of Mr. Blackadder may be correct *in the greater number of instances*. Thus far we agree with the author; but we are not disposed to accede to that as being the *absolute* law of the progress of the disease, considering that the testimony of some accurate and judicious observers would lead us to form opposite conclusions. We postpone the further consideration of this question, until we arrive at that part of the work in which the author expressly treats on the history of the disease.

Mr. Blackadder submitted his opinion on this subject to a senior medical officer; but he was informed that gangrenous phagedæna was generally considered a *constitutional disease*. On inquiry, he found that the mode of treatment, modified by the various theories which different individuals had adopted, was particularly directed to the diseased actions of the system.

“Notwithstanding,” says the author, “the discouraging impression which this information was calculated to produce, it was not sufficient to remove the conviction which I felt in the accuracy of the preceding observation; and I could not avoid taking another opportunity of stating it as my opinion, that, if any thing could be found effectually to destroy the diseased action in the sore, it would also be found to effect the greater part of a cure; and that, were it consistent with the present ideas of medical officers in the army to treat this disease agreeably to the aphorisms of Hippocrates, ‘that diseases which medicine will not cure must be referred to the knife, and, if that prove unsuccessful, *recourse must be had to cautery*,’ I did not entertain a doubt, but that such a practice would be followed by the most happy events.—The employment of the cautery was, on this occasion, considered inexpedient; but I was given to understand that I was at liberty to use any remedy that was not inconsistent with the general practice and opinions of British military surgeons. Under these circumstances, the oxide of arsenic occurred to me as an article that was probably possessed of powers sufficiently active for effecting the purpose intended, and of supplying the place of a more powerful, though less gentle, remedy.”

This, however, was not contained in the apothecary’s stores; but he obtained some of Fowler’s solution, which was employed, diluted with an equal quantity of water. Two severe cases in the inflammatory stage of the disease were first selected. The patients were directed to keep their sores constantly moist with the solution, and to renew the lint at least once in two hours. They were supplied with opium, to take in case the pain produced by it should become excessive.

“On visiting my patients next morning,” says Mr. B. “it was impossible not to be struck with the change in the expres-

sion of their countenances—from that of acute pain, mingled with despair, to that of ease and gratulation. Upon examining their sores, I found them completely dried up, and covered with a dark, semi-transparent, and insensible slough, of a somewhat horny consistence.”

The farther progress of the disease was evidently and completely arrested, and, by suitable applications for resisting nature in throwing off the slough, and in cicatrizing the sores, they were, in no great length of time, completely cured, without having used any internal medicine, farther than what might be occasionally required to prevent constipation of the bowels. Mr. B. continues,

“ From this period, I never saw an instance in which this method of cure failed of success, when the remedy was timely and properly employed. Patients, whose sores had resisted, as was said, almost every other treatment, were admitted from other hospitals, and cured by it; and it was also, as I was informed, ultimately introduced into other hospitals, and proved equally successful.”

We now arrive at the second chapter, in which Mr. Blackadder enters more fully into the consideration of the history of gangrenous phagedæna. The development and progress of the disease are described with much minuteness, and, we doubt not, with equal accuracy; and the character of it, as depicted by him, accords with the opinion he has formed of the nature of the affection. We would gladly transcribe the whole of this account, but our limits confine us to those points which tend to prove the origin of the disease from the local contact of a specific morbid poison. We must, however, state that these extracts will convey a very imperfect idea of the value of this part of the work; and of the accuracy, penetration, and disposition carefully to investigate facts in their series and order, so manifest in the character of the author. After observing, that the general appearance and *odour* of the sore is such as cannot be mistaken by a person accustomed to witness the disease, he says,

“ When the morbific matter, which produces this disease, has been applied to some part of the surface of the body from which the cuticle has been removed, as by a blister, the first

morbid appearance which presents itself is that of one or more small vesicles, which are filled with a fluid, in some instances having a watery appearance, while in others it resembles a bloody serum. The situation of the vesicle is generally at the edge of the sore: its size is not unfrequently that of a split garden-pea.

“During the formation of the vesicle, the patient is generally sensible of a change in the usual sensation of the sore, which he cannot well describe, but which is accompanied by an occasional painful sensation, resembling the stinging of a gnat.”

The vesicle, in one or two days after its formation, assumes the appearance of a slough, which begins to extend, and spreads with more or less rapidity, until it occupies the whole surface of the original sore; and, when left to itself, there is little or no discharge, but the slough acquires daily a greater degree of thickness. When the formation of the slough has been interrupted, the stinging sensation becomes more acute, phagedenic ulceration quickly commences, and in a few hours a very considerable excavation will be formed. The edges of this cavity are well defined. The lymphatic vessels are, in many cases, irritated. The soft parts in the vicinity of the sore become painful, tumified, and indurated; and in persons of plethoric and irritable habits, an attack of acute inflammation supervenes. This generally subsides within from two to five days: the slough on the sore becomes more moist; matter is discharged around its edges; it then begins to separate, and is soon thrown off, but only to prepare the way for an extension of the disease, by a continued process of ulceration, and a recurrence of the last-mentioned symptoms.

This account of the progress of gangrenous phagedæna agrees exactly with that of the disease termed *sloughing phagedæna* by Dr. Adams,* or the *nigrities serpens* of Celsus. There is an important symptom, described by Brugmans as characteristic of hospital gangrene, which is not mentioned by Mr. Blackadder: he observes, “there is often found, at some distance from the ulcer, a circle of a deep red, which extends more and more in concentric lines.”

* Treatise on Morbid Poisons, ch. v. p. 57.

The author then describes the appearance of the disease when it supervenes upon an old sore, where a considerable depth of new flesh has been formed: "it is then seldom detected until it has assumed the form of a small dark-coloured spot on some part of the surface, and generally at the edge of the sore, as has been noticed in the foregoing variety. But, by careful observation, it has been ascertained in several instances, that it commenced, as in the former instance, in the form of a vesicle." The future progress of the disease is nearly the same in both cases.

"When the morbid matter has been inserted under the cuticle by puncture, superficial incision, or scratch, the progress of the disease, in its early stages, can be more accurately observed than in any other instance; but, as the symptoms which are exhibited during the first nine or ten days after vaccine inoculation has been performed, are so well known, and have been so frequently described, all that seems necessary on the present occasion is to observe that, with the following exceptions, the two diseases bear so striking a resemblance to each other as to render a particular enumeration of the symptoms unnecessary. The primary inflammation in gangrenous phagedæna commences at the end of the second, or early on the third, day; the inflammation is at its height about the sixth: when the scab begins to form in one disease, phagedenic ulceration commences in the other."

Here, however, we have the specific distance of the inflammation attending the action of a morbid poison evidently referred to.

"When it supervenes upon a recent gun-shot wound, the discharge is at first found to be lessened in quantity, and to have become of a sanious nature; the sore has a certain dry and rigid appearance; its edges are more defined, somewhat elevated and sharpened; the patient is sensible of a change in the usual sensation in the sore, and he also complains of the occasional stinging before mentioned. The integuments at the edge of the sore become inflamed, and the surface of it assumes a livid or purple colour, and appears as if covered with a fine pellicle: this gradually increases in thickness, forming what has been termed a slough. An offensive matter then

begins to be discharged, and the edges of the sore, which are usually jagged or pectinated, become extremely irritable, of a deep red colour, and dotted on their inner surface with numerous, small, elevated, and angry-looking points, which may be considered as one of the characteristic marks of the disease."

Some observations follow on the variation of the degree of local inflammation, from the habit of body of the patient, season of the year, &c. and the appearance the sore assumes in different parts; after which the author proceeds to the consideration of the constitutional symptoms, and which he states never to have had an opportunity of seeing precede the local,—"unless it be held, as an exception, when the disease has supervened upon a stump, after amputation has been performed on account of the previous effects of the disease."

"The period at which the constitution begins to exhibit symptoms of irritation is extremely irregular: sometimes it is so early as the third or the fourth day, and sometimes even so late as the twentieth."

It assumes more of an inflammatory or typhoid character, as the particular causes producing these modifications have been predominant. These are described with much accuracy and judicious discrimination; after which, the author points out the diagnostic symptoms of the local disease, and observes that it is liable to be confounded with phagedena cachectica, the mercurial phagedena, the scorbutic ulcer, and that morbid action which supervenes upon a wound when the constitution becomes affected with some acute disease.

The origin of gangrenous phagedena is next considered. After mentioning the opinions generally adopted, Mr. Blackadder says,

"Whatever may be the source of this disease, it is, at least, sufficiently ascertained that, when it occurs, its progress is only to be prevented by the most rigid attention to cleanliness; and by insulating the person or persons affected, so as to prevent all direct intercourse between them and the other patients; for, so far as I have had an opportunity of observing, ninety-nine cases in the hundred were evidently produced by a direct application of the morbid matter to the wounds or sores, through the medium of sponges, tow, water, instruments,

dressing, &c.; while others, who were, in every other respect, equally exposed to its operation, never caught the disease. In attempting to prove this by experiment, I have placed three patients with clean wounds, (one of which was an extensive wound of the thigh, another a wound of the leg, and a third a stump of a thigh.) alternately between three other patients severely affected with the disease. They lay in a part of a ward which was appropriated for patients who were labouring under the disease, and of whom there were, at the same time, a considerable number. Their beds were on the floor, and not more than two feet distant from each other; but all direct intercourse was forbidden, and they made fully aware of the consequences that would follow from inattention to their instructions. The result of this trial was, that not one of the clean wounds assumed the morbid action peculiar to the disease, nor was the curative process in any degree impeded. I have likewise had an opportunity of witnessing a similar result in two instances of this disease occurring after amputation; in both of which cases the patients lay in small apartments, each containing from six to eight patients with healthy wounds; but in neither case was the disease disseminated, although it proved fatal, in both instances, to the individuals affected with it."

We have before remarked, that the testimony of surgeons who have had opportunities of investigating this subject, and of the accuracy of whose observations we are disinclined to doubt, is in opposition to that Mr. Blackadder. Although disinclined to multiply authorities unnecessarily, we cannot forbear adducing the following circumstance, related by Professor Brugmans.—“ At Leyden, at the end of the summer of 1798, in the French military hospital, the hospital gangrene prevailed in one of the lower wards, while the other patients, attacked with slight wounds, and placed above this room, in an airy attic, were free from the evil. The surgeon on duty thought it expedient to have a hole cut in the floor, in order to procure a vent for the foul air, in its progress through the roof. Thirty hours afterwards, the three wounded men, who lay in the garret nearest the aperture, were attacked with gangrene, which soon spread throughout the whole room.”

Much benefit will accrue to practice from the view Mr.

Blackadder has taken of gangrenous phagedena; and in those cases particularly in which it is primarily a local affection, (and that it may be so in many instances we perfectly concur with him,) the advantages that will be derived from his mode of treatment, above that of any previously adopted, (if we except the actual cautery, employed by the French, which M. Roux calls an *heroic remedy*, and the want of permission to use which in the English army is so feelingly regretted by Mr. Blackadder,) are evident, and of the utmost importance; but, in the present state of our knowledge respecting it, we consider that the arrangement of a military hospital, on the principle that it cannot be disseminated through the medium of the atmosphere, and in the manner in which those diseases usually termed *infectious* are done, would be an imprudent measure. We must, however, endeavour to do justice to Mr. Blackadder: that he is a man of acute penetration, accurate discrimination, and nice judgment, is most clearly evident; and the work before us is an admirable specimen of what may be deduced from the application of such talents; but we consider the series of facts from which his conclusions are drawn are not sufficiently extensive to determine our opinion on the nature of the disease under every modification of circumstances, considering that the testimony of other judicious observers would lead to opposite conclusions.

Several species of ulcers are described by Dr. Jackson,* which he considers appear under such circumstances as if they depended on some inexplicable modification in the action of the cause of fever—endemic or infectious. In particular places, and at particular seasons, they are so frequent as to be in a manner epidemic. We transcribe his account of the second species.—“The beginning of which is marked by the appearance of a pimple—hot and painful from the commencement, the pain sharp and stinging. The cuticle separates; the discharge is thin, sharp, and acrid. The circle of the pimple expands; the edges become red, and what is termed angry, with sensations of burning heat, sharp and pungent pain. The ulcerating process commences, and extends; the true skin is destroyed; the ulceration penetrates into the adjacent parts

* Sketch on Febrile Diseases, chap. iv. § 2.

with more or less rapidity, affects the membrane of the bone, and, on many occasions, the bone itself. The discharge from these rapidly-spreading ulcers is sometimes thin and acrid, so as to excoriate, by its sharpness; sometimes a copious, glairy, dusky coloured, jelly-like, substance, more or less bloody; the surfaces underneath, and even the edges, are foul and fungous, or the adjacent parts break down rapidly into a disorganised mass." "This ulcerative form of fever is not common in the less healthy months of the year, where common fever most prevails, nor at the most unhealthy points of an unhealthy sea-coast. To this it may be added, that ulcer and formal fever do not ordinarily occur in the same place, much less in the same subject at the same time; but that, when the ulcer has healed, or when it has assumed a healing appearance, fever supervenes not unfrequently; and that it is mild and tractable when it does supervene, or violent and malignant in the last degree of malignancy, according to what had been the character of the preceding ulcer. It was the observation of this and other analogous facts, which induced me to rank the ulcerative form of disease, whether endemic or infectious, as I now do. The propriety of the arrangement may be disputed; I contend only for the accuracy of the fact as here stated."

We do not adduce this as hospital gangrene; but we consider that it may throw some light on the nature of that disease, which we have long considered, and have so expressed our opinion in various instances, as arising from the local effects of those causes, which, affecting persons without wounds, would produce what is usually termed typhous fever. If this notion be thought correct, it will explain the disputed point respecting the order in which the symptoms occur in gangrenous phagedæna; as it will show that they may, like small-pox and some other diseases of this kind, take place in either way.

There is one important circumstance respecting hospital gangrene which we believe we have not mentioned, that of its recurring several times; this is noticed by all the practical writers on the subject. The sore will cease to spread; the slough become detached; and an appearance of healing take place: when, suddenly, without any evident cause, the peculiar mor-

bid action will return, and the sore will again run through the process of inflammation and sloughing. It appears that, after a short time, the parts regain a susceptibility of the influence of the poison which may have been taken up from the sore, and then affects it through the medium of the general system. This is not consonant, as far as we are acquainted, with the laws of those morbid poisons which affect the general system primarily, causing an acute attack of fever and secretion of a poisonous matter similar to that which produces the disease. The fever is considered by writers in general as acute or idiopathic, and of the typhoid character; but the description Mr. Blackadder gives of it, is that of fever symptomatic of local inflammation, or the irritation of the sore. This, with the repeated occurrence of the disease, is conformable to what we know of the law of those morbid poisons whose primary effects are local.

The author next treats on the method of cure, which resolves itself into two principal indications:—1st, to destroy the morbid action in the sore; 2dly, to regulate the re-action of the system. Our limits will not permit us to enter fully into the consideration of this part of the subject; and we have already mentioned the chief means of accomplishing it. There are a few circumstances, however, respecting it, on which we consider it necessary to make some observations. It has been stated that the external application of preparations of arsenic is not unattended with danger; Mr. Blackadder has never witnessed, but in one instance, any bad effects which could possibly be attributed to it; and this evidently arose from its having been applied in an improper manner. The French surgeons sometimes employ an arsenical paste; and instances are related of its employment having been followed by death, and of which it was apparently the cause. Mr. Blackadder considers that it is highly probable that the blame, in these instances, did not rest with the remedy, but the manner in which it was employed. It may be applied to a sore in such small quantities as to admit of its being absorbed into the system; but, by using it in sufficient quantity, quickly to destroy the organization of the part, such absorption may be prevented.

The sores should be kept perfectly clean by means of a

solution of potash and tow alone employed for this purpose, that every thing imbued with matter from them may be destroyed. Amputation has sometimes been had recourse to; but Mr. Blackadder states, that this was almost uniformly unsuccessful, the morbid action occurring in the stump. He then says,

“ It may, therefore, be asked, if the disease can be removed by a topical application, acting merely as a cauter, why may not amputation answer the same purpose, seeing that the whole sore, and nidus of the disease, would thereby be effectually removed? And why should the disease again break out on the new surface of the stump, provided the patient be secured from any fresh source of contagion?”

To these questions, Mr. Blackadder replies, that the arsenical solution destroys the morbid action in the sore; yet, in many cases, the constitution must have become contaminated, by absorption of the poison; but we find that the natural powers of the system are such, on this as well as on the other occasions, as to be able gradually to rid itself of this portion of morbid matter. Thus we find that, although the local morbid action be overcome by the arsenical solution, it will frequently recur again and again, requiring similar means for its removal; so that the arsenic may be said to arrest the local progress of the disease; and prevent a fresh production of morbid matter, until the natural powers of the constitution are able to overcome the disease and effect a cure: or, as we should say, until the constitution is no longer susceptible of the irritation of the poison.

“ The second indication of cure (says the author) will seldom require to be much attended to, if sufficient attention has been paid to the first symptoms of the disease: but, when the constitution demands attention, the re-action must be moderated or supported according to the plethoric or exhausted state of the patient.”

We now arrive at the second part of the work, which contains an investigation into the history of gangrenous phagedæna, as it is to be found in the writings of various ancient and modern authors. Mr. Blackadder here endeavours to prove, that the disease which forms the subject of this inquiry, far

from being, as by many supposed, either new or overlooked, was not unknown; but, on the contrary, that its most appropriate treatment is distinctly pointed out by some of the oldest writers on surgery; and in this we consider Mr. Blackadder has succeeded. After mentioning the principles on which this inquiry was conducted, the author says,

“It is, nevertheless, in its present form, far from being what I could have wished, or what was intended, and is, indeed, only a small part of the materials that were collected with the hope of being able to lay something more worthy of perusal before my readers; but, owing to a state of health which little admits of that close or constant application, without which small progress or improvement can be made, either in literature or the sciences, I am forced either to place it, unfinished as it is, at the mercy of my readers, or what, to one who may have some professional zeal, and withal, not destitute of the ambition of being useful, is equally repugnant, to allow it to remain in its original obscurity. Those, who are accustomed to study their own minds, will at least not be surprised at the, perhaps unfortunate, alternative I have chosen.”

We, who are not untried in those matters, well know the toil and difficulties he has undergone, and must bear testimony to our readers of the value of the fruits of his labours. We cannot, from the nature of the subject, give an account of the information it contains; and this we are less anxious to attempt, because we are confident that no one who has a due degree of zeal for the cultivation of surgery will neglect to make himself possessed of the work before us. We shall, however, take a cursory view of its contents, both because we feel a reluctance to dismiss such interesting matter unnoticed, and that the author has interspersed some remarks which we did not find in his practical history of gangrenous phagedæna.

Mr. Blackadder commences with an effusion of admiration for men who now live the life of immortality; and a reprehension of folly and presumption, evidently dictated by a mind ardent with the love of nature and of truth.

He seems to consider the *Therioma* of Celsus, terminating in *Phagedæna*, as what he has described as phagedæna gangrænosa. The appearance of that ulcer without any evident cause,

(*per se nascitur*) accompanied with a peculiarly disagreeable odour, stinging pains, extraordinary degree of surrounding inflammation, hæmorrhage, the rapid increase and extensive ravages it made, the fever which sometimes ensued, and the mode of cure by actual cautery in obstinate cases, appear to indicate its origin from a morbid poison; and the symptoms certainly bear a strong resemblance to those of hospital gangrene. Roland and Belloste, in particular, appear to have witnessed the disease; the remedies they employed were composed of lime, colcothar of vitriol, and arsenic. Some valuable observations and extracts from the works of Rogerus, Brunus, Lanfrancus, Guido, and Ferrus, ensue. Ambrose Parey mentions a state of wounds after injuries, both from gun-shot and swords, which has some of the characters of hospital gangrene; but he is not very particular in his description, considering it to arise from a corrupted state of the atmosphere. His remedy was the *Unguentum Ægyptiacum*. We pass over Wiseman and Horstius to La Motte, who distinctly describes it as occurring at the Hôtel Dieu. His remedies were *mel Ægyptiacum*, storax, and other warm and spirituous applications. In the posthumous works of M. Pouteau are two memoirs on this disease; he considered the disease as contagious, and the consequences he witnessed from it such as to make him ask, "Have hospitals been more beneficial or pernicious to human nature." He employed the actual cautery; or, if the surgeon or patient were so timid as to be terrified at the use of this remedy, boiling oil, with the addition of some acrid substances might be substituted for it. He then notices a paper written by Dr. Gillespie on this disease. The observations of Dr. Adams on *Sloughing Phagedæna*, in his work on *Morbid Poisons*, are next referred to. On these, Mr. Blackadder makes no remarks, considering that every one is familiar with the work; and because (in the words of the author) "it is next to impossible to do justice to him, without making much larger extracts than is, on the present occasion, admissible; more particularly as my attention is principally directed to the practical observations of such as have themselves been actors on the stage." Here we consider Mr. Blackadder has fallen into an error; it is evident to us that Dr. Adams did not con-

sider the disease he termed sloughing phagedena as hospital gangrene; and therefore, his observations are not at all applicable to this question.

Some remarks ensue on the memoir of Citizens Moreau and Burdin. The account Dr. Rollo published of this disease, at the end of his *Treatise on Diabetes*, as it occurred at the Military Hospital at Woolwich, with which we suppose our readers are well acquainted, is next considered. The observations of this gentleman on the nature and progress of the disease, and his principles for the method of cure, very nearly accord with those of Mr. Blackadder. We can merely notice the names of the authors who have subsequently written on the subject, which are—Mr. Ballard, Dr. Harness, (whose observations were communicated in the 4th volume of our Journal,) Mr. Edwards, Mr. John Bell, Dr. Trotter, Mr. Caird, Mr. Brown, Mr. M'Dowal, Mr. Arthur, Mr. Little, M. Larrey, M. Delpesch, and Dr. Thompson.

In the course of his remarks on the work of M. Delpesch, the author says,

“ I do not wish it to be understood that I believe it impossible for this contagion to be, in any given circumstance, conveyed to a sore through the medium of the atmosphere; but there cannot be a doubt, that by far the greater bulk of the evidence we are possessed of, goes to support an opposite view of the subject; and, therefore, I contend, that the facts which have hitherto been brought forward in support of this mode of propagation, being in no instance decisive, can at most be only considered as exceptions to a general rule. I have frequently had occasion to remark, on removing fomentations or poultices, which had been applied to sores affected with this disease, and even when the temperature of the atmosphere was upwards of 60° Fahrenheit, that a dense white vapour arose, and was in some instances visible upwards of six inches above the sore. It seems, therefore, possible, that a small or crowded apartment may, through the ignorance or negligence of the medical attendant, be made to resemble a vapour-bath, by the effluvia from the sores being allowed to accumulate so as to be almost visible. In such a case it is not improbable, that the disease would be propagated through the medium of the at-

mosphere. This, however, I would consider equivalent to inoculation or immediate contact."

It is obvious that those, whose observations have led them to consider the general system as primarily affected, could with equal propriety apply this mode of reasoning to favour their opinions respecting the manner in which the disease may be disseminated. We must, however, remark, that the character of the sore appears more to resemble that arising from local contact of a morbid poison, than from specific action consequent on general disease of the system.

Our limits will not permit us to dwell any longer on the consideration of this work; but we cannot pass over the remarks of Mr. Blackadder on the observations of Dr. Thompson on hospital gangrene, without declaring our approbation of them; the strength and dignity of manner, with which they are expressed, indicate great delicacy of feeling, and a well-cultivated mind.

Energy of style, polished wit, and well-directed raillery, are highly grateful to the critic, and soothe his toils in pointing out the paths which lead to the dwelling of science; and we have found them in the work, the review of which we have just completed. But these are not the traits with which the merit of it should be depicted: it has a more noble and important character,—that of eminently contributing to improve the art of surgery

Physiological and Medical Researches on the Causes, Symptoms, and Treatment, of Gravel; by F. MAJENDIE, M. D. &c.

[From the London Medical and Physical Journal, for October, 1818.]

THERE is no disease, for obtaining an accurate knowledge of which, the abilities of the chemist, the physiologist, and the practical physician, are more requisite, than that of calculous concretions in the kidneys and bladder: a work, therefore, on this subject, by M. Majendie, must be considered with no small degree of attention by the medical profession.

“Notwithstanding its frequency, (says the author) the distressing symptoms with which it is accompanied, and its serious consequences, gravel has been but slightly noticed in general works on medicine and surgery: in particular treatises on the diseases of the urinary organs, it is considered in a very imperfect manner; and, to my knowledge, it has not hitherto been the professed subject of a work.”*

M. Majendie first treats on the nature of the sand and stones voided by persons affected with this complaint. The knowledge of the composition of those substances is entirely due to the researches of modern physiologists. Van Helmont, notwithstanding his penetrative imagination, could only compare their formation to the deposition of tartar from wine. Paracelsus believed them to be formed of *animal resin* hardened by what he termed the *spirit of urine*. It is to Scheele that we are indebted for the origin of our knowledge on this subject: he shewed that the concretions voided with the urine were principally formed by a particular acid, to which he gave the term *lithic*. The researches of Wollaston, Fourcroy, Vauquelin, Brande, and Marcet, have fully confirmed the discoveries of that illustrious chemist, and have furnished us with the knowledge of many other important facts.

Some species of calculi contain a small proportion of oxalate of lime; and, in a few instances, they are almost entirely formed of oxalate or phosphate of lime. When they remain long in the kidneys, they become covered with a thin layer of phosphate of lime and magnesia. M. Claubry has lately found in the kidney of a man four calculi, each formed of a nucleus of oxalate of lime, and an exterior layer of uric acid. Upwards of thirty specimens of gravel were analysed by M. Majendie, and he found them all composed of uric acid united with a small proportion of animal matter.

The urine of man, he observes, and of all animals, who use a diet of aliments containing a large proportion of azote; as flesh, fish, eggs, &c. contains uric acid; and it is very abundant in that of those who live exclusively on animal food. On the

* Dr. Marcet, in his treatise on Calculous Disorders, has not thought it necessary to separate the history of gravel from that of other calculous formations in the urinary passages.

contrary, in animals who are fed with vegetables, the urine does not contain the smallest quantity of uric acid.

Water, at the temperature of from sixty-five to seventy degrees of Fahrenheit, dissolves only the $\frac{1}{1720}$ part of its weight of uric acid; boiling water dissolves it in the proportion of $\frac{1}{1150}$, and the solution, on cooling, deposits a portion of the acid in thin laminæ. The solubility of the salts formed by uric acid, is relative to that of their bases. Almost all the acids are capable of decomposing them.

The cystic oxide, the author states, very rarely enters into the formation of gravel and urinary calculi; but, as the nature of this animal matter is not generally known, it may be proper to mention its general properties. Calculi formed of cystic oxide, are semi-transparent, of a yellowish colour, and have a lustre similar to that of bodies of a density powerfully refractive. Exposed to heat, in a retort, they furnish carbonate of ammonia of a fetid odour; there passes also an heavy fetid oil, such as is obtained from animal matter, but in a much less proportion than that which results from a distillation of uric acid. These properties show, that, like uric acid, it is principally composed of azote; it is therefore probable, that it is produced by the same causes which determine the formation of uric acid. This substance is but very slightly soluble in water, not at all in alcohol, or the acetic, tartaric, and citric acids; it is, on the contrary, soluble in the muriatic, nitric, sulphuric, phosphoric, and oxalic acids, as well as in potash, soda, lime-water, and the carbonates of potash and soda. The greater number of those properties approach to those of uric acid.

When treating on the causes of gravel, M. Majendie observes; it is evident the formation of uric acid is not accidental, or owing to diseased action, but that it is one of the essential principles of the urine of a person in a state of health: it is then, however, held in solution by the urine; but, in this disease, it is deposited in the passages intended for the collection and evacuation of that fluid. As water, at the temperature of 80° , dissolves the $\frac{1}{1800}$ part of its weight of uric acid; the urine of a person in a state of health, being about 50° , may be supposed capable of retaining in solution about the $\frac{1}{1500}$

part of its weight, supposing, what nothing yet known tends to refute, that the other principles of the urine do not favour its solution. This being granted, it appears that three evident causes may diminish, in a manner absolute or relative, the dissolving property of the urine in respect to the uric acid.

1. An increase in the quantity of the uric acid, the quantity of urine remaining the same, or not increased in proportion to the acid.

2. A diminution in the quantity of the urine, that of the uric acid continuing the same, or not diminishing in proportion to the urine.

3. A diminution of the temperature of the urine, whether its quantity or nature continue the same or undergo the changes above mentioned.

Among the causes which augment the proportion of uric acid, a too nourishing diet, and particularly of animal substances, may be considered the most efficient. When, with this, persons lead a sedentary life, or use exercise which requires but very little exertion of the muscular system, as is the case with literary men, the rich, and old people in general, the disposition to its formation is much increased. As long as the urine is sufficient to hold in solution the uric acid formed, any increase in its quantity is productive of no inconvenience; and this is doubtless what happens to many persons who use the diet just described, and who are not affected with gravel; but, as soon as the increase of the quantity of urine does not proportionally follow that of the acid, gravel is immediately formed.

In general, the proportion of urine is relative to that of the liquids drank; and, therefore, a person who uses a full diet of animal food, will be more likely to escape gravel, if he drink a large, than if he drink a small, quantity. This must be understood, if the fluids he takes be not charged with alcohol.

Animals which live on vegetable food, void a much larger proportion of urine than carnivorous animals, notwithstanding they drink much less. All causes which are known to diminish the quantity of urine will, therefore, favour the formation of gravel; as an abundant cutaneous transpiration, sweats,

and lying much in bed, will consequently tend to produce it. A diminution of animal heat, and consequently of the temperature of the urine, will have the same effect, and this is one reason why old people are so particularly subject to it. Various other causes will also favour its production; it appears from the observations of Dr. Scudamore,* that the poor people of a district between Tunbridge Wells and Lewes, who drink much of "hard beer," are particularly afflicted with it. There are many persons, who, after violent exercise, to which they have not been accustomed, pass large quantities of gravel. It frequently follows indigestion. M. Majendie does not consider the formation of gravel, in these cases, the consequence of indigestion, but that they both arise from the same cause. The author is inclined to attribute the freedom the Indians enjoy from gravel, not to the climate, as some have done, but to their living on vegetable food. The results of the enquiries of Dr. Marcet respecting the relative proportion of patients with stone, in the different hospitals of Europe, favours this opinion. At Guy's Hospital, the proportion is one in three hundred; at St. Bartholomew's, one in three hundred and forty; in the Royal Infirmary at Edinburgh, only one in a thousand. This difference in the proportion between the Scotch and the English, may be explained, by the diet of the poor of the former country being almost entirely of vegetables, while the latter take a large quantity of animal food. The notion that calcareous waters tend to produce gravel is erroneous; they, on the contrary, may be advantageously employed for the relief of this complaint. M. Majendie considers that the causes which tend directly or indirectly to produce the formation of gravel may be reduced to the following:—

1. Mature and old age.
2. A too nutritious diet, principally composed of aliments containing a large proportion of azote.
3. Want of bodily exercise, lying too long in bed, &c.
4. The habit of drinking but little.
5. The use of generous wines and spirituous liquors.

* Related in his Treatise on Gout.

6. Abundant cutaneous transpiration, copious sweats, and serous evacuations, in persons previously disposed to gravel.

7. The bad habit of retaining the urine long in the bladder.

8. Particular causes, of which it is impossible to mistake the effects; although their mode of action may not be understood.

M. Majendie thinks that, under certain circumstances, a large quantity of gravel may be formed in a few hours, the solidification of the uric acid taking place as soon as the urine is secreted. He is not decided where this precipitation of the uric acid principally takes place, but supposes it to be in the pelvises of the kidneys.

Sand, in general, passes without causing much uneasiness, when the secretion of urine is copious; but, when otherwise, particles becoming joined together, form small calculi, which occasion great pain in their passage through the ureters. If any of those become arrested in their progress in the urinary passages, they form a nucleus for the formation of larger stones.

The following are the curative indications in this disease:—

To diminish the quantity of uric acid formed in the kidneys.

To augment the secretion of urine.

To prevent the solidification of the uric acid, by saturating it with a more soluble basis.

Gravel and calculi being formed, to favour their evacuation, and attempt their solution.

The formation of uric acid depending on the use of aliments containing azote, the mode of fulfilling the first indication is obvious; the quantity of animal food, eggs, &c. should be diminished, and, in some instances, entirely changed for a vegetable diet. This will generally correct the disposition to the formation of gravel. M. Majendie has seen cases, in which the patients had been for many years tormented by gravel and small calculi, entirely relieved in a few weeks by the use of a diet of sugar alone: this, however, cannot long be persisted in, as it disagrees with the stomach. A diet composed entirely of pastry, the farinaceous legumens, rice, potatoes, rye-bread, with a moderate proportion of sugar, has, in general, been found equally efficacious.

The most simple mode of increasing the quantity of urine is to drink plentifully; and this is the usual custom of persons afflicted with gravel. Many, by this means, without change of regimen, have been entirely relieved from the disease. The drink may be either simple water or infusion of some vegetable; mineral waters, &c.; sometimes nitre may be added with advantage. Five or six pints of drink daily will not be too large a quantity, particularly if the gravel be abundant. But little wine or spirituous liquors should be taken; and, when the gravel is considerable in quantity, a diet principally of vegetables (which favours a copious secretion of urine) should be employed.

The third indication, *to saturate the uric acid*, is to be effected by the alkalis or their sub-carbonates. That many substances are carried from the stomach to the kidneys, without passing through the general circulation, M. Majendie thinks is sufficiently proved: and of those, some of the saline preparations are most quickly transmitted, and in the most unaltered state. The alkaline sub-carbonates are decomposed in the urine, the uric acid unites with the base, and forms salts more soluble than the acid. This greater degree of solubility is in proportion to the excess of the base: it will, therefore, be necessary to preserve an excess of alkali in the urine, not presenting acid qualities.

The last indication,—*to favour the expulsion of sand and calculi, and attempt their solution*,—is not less, and is indeed frequently more, important, than either of the preceding. The expulsion of sand is usually not attended with much difficulty. The facility with which the particles are displaced, from their smallness, and their property of resting suspended in the urine, provided it contains a little mucus, concur to favour their evacuation: thus, in the greater number of cases, a certain quantity of aqueous drink will effect their evacuation with little difficulty. The expulsion of calculi will also be much favoured by drinking copiously of water. M. Majendie recommends emetics in these cases; considering that the pressure of the abdominal muscles, during the action of vomiting, will contribute much to hasten the passage of the calculi to the bladder and through the urethra. Emetics will also be bene-

ficial by correcting the disordered state of the digestive organs which usually accompanies it. When the distress is very great, the most rigorous diet, general blood-letting, leeches, cupping, baths, and fomentations, are the principal measures to be adopted. If these are not effectual, exercise on foot and on horseback, if the patient can bear it, and the repeated use of emetics, should be resorted to. When it appears that the calculus has entered the bladder, but has not passed through the urethra, the measures before advised to prevent its increase should be employed. When the calculi are composed of uric acid, both chemical and physiological reasoning would lead us to suppose that those measures would be effectual. But this will not be the case when they are formed of the ammoniaco-magnesian phosphate, the oxalate of lime, &c. these, however, but rarely constitute the calculous concretions of patients afflicted with gravel.

Cystic oxide, as it contains a large proportion of azote, probably owes its formation to the causes which produce uric acid; the same remedies will therefore be adviseable.

Acids have been proposed to be employed, in the treatment of gravel, consisting of phosphate of lime; the urine in cases of this kind contains an excess of ammonia, which is probably the principal cause of its production; and Mr. Brande has related a case in which carbonic acid was very beneficial. But M. Majendie could never effect the solution of depositions of this kind, when out of the body, by either the vegetable or mineral acids. He, therefore, thinks the best mode of treatment is to produce an abundant secretion of urine, and endeavour to relieve the distress and debility which usually accompany this disease.

Pathological and Therapeutical Observations on Hæmorrhoids.

"The subject of the present Article is characterised by laborious and patient research, and exhibits all the systematic arrangement and analytical transparency, which are peculiar to the scientific literature of that country." *Sir. T. C. Morgan, in the Edinburgh Journal, No. LIII.*

[From the Medico-Chirurgical Journal for October, 1818.]

IN the highly respected cotemporary Journal above mentioned, is given a meagre and imperfect account of an extremely interesting article in the 20th Vol. of the great French work now publishing by some of the most eminent physicians and surgeons of France. We shall here present the English reader with a clear and well defined picture of Dr. Montegre's monograph, convinced that the subject is both ill understood and too much neglected by British physicians. Having been *hæmorrhoidinarians* ourselves for more than twenty-five years, and having paid unusual attention to this complaint, both in our own persons, and in our patients, we may be allowed to be, in some degree, judges of the doctrines and practices brought forward by the continental physicians; consequently, this article is to be regarded, not as a tame translation, but as an eclectic analysis, occasionally interwoven with the personal observations of the translator.

Sect. 1. Description and Definition.

The well known Greek definition of hæmorrhoids [*sanguifluxus*] conveys a most imperfect idea of the disease; since a *discharge of blood*, though a frequent, is by no means a constant symptom. The same may be said of the anal tumours. From the effect of causes which it is often difficult to recognize, there occurs, at certain periods, a sanguineous fluxion or determination (*fluxion sanguine; mouvement fluxionnaire*) towards the extremity of the rectum; evinced at first by merely a sense of *tension or weight* there, with scarcely any pain, and gradually going off in three or four days. This determination is renewed at longer or shorter intervals; fre-

quently, but not uniformly, accompanied by a discharge of florid blood on going to stool, exhaled, as it were, from the mucous membrane of the intestine, and usually without any visible erosion of structure. After a time, hæmorrhoidal tumours in general appear, merely as a *consequence*, but not as an essential part of the affection. In fact, the sense of *tension and weight* is the only *pathognomonic* mark of the disease; all the others are accessory, or contingent.

In well marked cases of hæmorrhoids, there are certain general or constitutional symptoms, which have been clearly, though concisely, summed up by the venerable Pinel. "Slight horripilation of the back and loins; occasional numbness of the lower extremities; hardness and concentration of the pulse; pallor of the face; dulness of the eyes, with a dark circle round them; dryness of the mouth; scantiness of the urine; gastric debility; intestinal flatulence; frequent inclination to stool and urine; sense of pressure about the anus and perinæum, with an occasional discharge of mucus." *Nosograph. Philosoph.*

It is hardly necessary to remark, that this train of symptoms, which evinces a great fluxionary movement in the system, is sometimes so slight as to evade notice, and is only recognized by the sanguineous discharge.

From this view of the subject, a considerable analogy between the hæmorrhoidal and menstrual flux will at once be perceptible, though the *periodicity* of the latter is much more regular than that of the former. We shall not, however, dwell on this analogy; but we may remark that the connexion between the hæmorrhoidal and *Portal* circulation,* in both sexes, points not only to the *causes*, but to the salutary *effects* of the hæmorrhoidal discharge, in various derangements of the organic balance. When within certain bounds, therefore, it can hardly be called a disease; since without impeding the exercise of any function, or causing any material inconvenience or pain, it tends, like the menstrual flux, towards the conservation of health.

* "Vena Portæ, Porta Malorum." *Stahl.*

Sect. 2. Accessory Phænomena or Complications.

These are commonly hæmorrhages; tubercles and tumours; inflammation; leucorrhœal discharges; or *consecutively*, fissures; excrescences; pains or strictures of the rectum; ulcerations; abscesses; fistulæ; indurations or even scirrhi of the gut; prolapsus ani; inflammation or irritation of the bladder or neighbouring parts. Of these contingent phenomena, we shall only notice one or two.

Hæmorrhage. This is among the first contingencies that supervene on the hæmorrhoidal movement, and is that which has improperly given a name to the affection. The most usual species of hæmorrhage is by a kind of *exudation* or exhalation from the extremities of the capillary vessels of the mucous membrane, in the same manner as from the uterine vessels at the catamenial periods. The blood in these cases is vermilion-coloured, accompanying, but not mixed with the fæcal matters. Sometimes the blood issues by a fine and continued jet, during the straining at stool; and yet, when we examine the parts with glasses, no solution of continuity is to be found, the blood evidently having issued from a dilated pore. Professor Richerand records a remarkable example. "A merchant arrived at his 90th year in perfect health. This long immunity from disease he attributed to an hæmorrhoidal flux which had been regularly established more than fifty years, and so considerable in quantity, that the blood spouted to a certain distance from the anus, as from a vein opened by a lancet." *Nos. Chir.*

Active Hæmorrhage. This is the result of a vital movement, and is always salutary when in moderation. It may, however, prove dangerous when excessive, and lead to *passive* hæmorrhage, which is of a much worse character. The immoderate or inconsiderate use of venesection from the system at large, or application of leeches to the anus itself, frequently determines this excess. The quantity of the hæmorrhoidal discharge varies much, as there are innumerable examples of people losing, from a few drops, to one or even two pounds of blood *daily*, and that for a long time, without any injurious consequences. Montanus knew a hæmorrhoidinarian, who, for

forty-five days in succession, discharged more than two pints of blood *per anum*, daily, and yet he perfectly recovered. Panorola relates the case of a noble Spaniard, who, during four years, passed daily a pint of blood by stool, and yet enjoyed the most perfect health. Boulli notices the case of a tailor, who passed torrents of blood from the hæmorrhoidal vessels, sometimes to the amount of ten pints; yet was he vigorous, and of a sprightly jovial character. Hoffman relates the case of a widow lady, 50 years of age, gross, and a high liver, who, after being harassed with a variety of anomalous symptoms, and particularly lassitudes, languors and faintings, was seized with the hæmorrhoidal flux, and in twenty-four hours lost more than *two gallons and a half* of blood! The symptoms of debility and oppression abovementioned were quickly dissipated, and she gradually recovered health and strength. These examples are sufficient to assure us, that the hæmorrhoidal discharge may be often enormous, without being necessarily fatal or even dangerous.

For the nature of the hæmorrhoidal tumours themselves, we refer to the short extract from the work of Larroque, inserted in this number of the Journal.

Mucous or Serous Hæmorrhoids. These occasionally succeed the sanguineous forms of the disease, especially where much inflammation has attended. They bear a very exact similitude to the leucorrhœal discharges from the uterine vessels, and depend on the same general and local causes. It is something remarkable, that they seldom occur where the sanguineous discharge from the hæmorrhoidal vessels is copious; a circumstance in which they correspond with the whites, which are rarely seen in females who have copious catamenia.

Sect. 3. Classifications and Distinctions.

Dr. Montegre divides hæmorrhoids into two orders: the regular or periodical; the anomalous or irregular. The *first* are generally constitutional, and not to be cured but at some risk. Such for instance as alternate with or succeed the catamenial discharge. The *anomalous* order are usually dependent on accidental circumstances, and the removal of

their *causes* is the proper method of cure. These two orders are divided by our author into eight species, comprehending numerous varieties. We shall briefly glance at the Species.

1. The dry hæmorrhoids (*cæcæ*.) These offer the genuine hæmorrhoidal movement or determination to the rectum before alluded to, and have no varieties. 2d Species. The *H. fluentes*, with two varieties; the sanguineous and mucous. 3d Species. *H. tumentes*, with two varieties; the *varicosæ* and the *mariscæ*. 4th Species. *H. dolentes*, with three varieties; the *inflammatoriæ*, *nervosæ*, and *H. cum fissuris*. 5th Species. *H. cum contractione ani*. 6th Species. *H. cum ulceratione*. 7th Species. *H. cum procidentia ani*. 8th Species. *H. cum irritatione vesicæ urinariæ*.

We do not mean to follow our author through these orders, species, and varieties; but we think the classification a useful and natural one for any author or lecturer who treats fully and distinctly on the subject. No one can deny that these *modifications* of the disease actually present themselves in practice, and moreover that they require a corresponding *modification* of treatment and attention. They are not therefore *useless* distinctions, as the indolent would fain represent them.

Sect. 4. Etiology.

1. Hereditary predisposition. 2. Climate. 3. Age. 4. Sex. 5. Habits of life. 6. Season and temperature. 8. Food. 9. Constipation. 10. The labours of the cabinet. 11. Depressing passions. 12. Certain diseases. 13. Pregnancy. 14. Tight clothes round the abdomen. 15. The abuse of drastic purgatives. 16. Too frequent use of glysters. 17. Venery. 18. External irritation. 19. The use of hollow night stools.

On each of these points Dr. Montegre descants with great acuteness and knowledge of the subject, and we regret that our limits forbid our following him.

We have so invariably found strong mental emotions of a *melancholy nature* to induce the hæmorrhoidal movement in our own persons, and have so often observed the same in others, that we can confirm the statements of our author on this head.

“ Anger, fear, ennui, disquiet, and habitual melancholy,

says Dr. Montegre, exert a remarkable influence on the *cæliac plexus*, situated in the abdomen, and in immediate sympathetic communication with the liver, biliary ducts, and the whole system of vessels that return the blood from the rectum. This impression is most felt at the epigastrium by a sense of uneasiness, load, and kind of constriction there, producing derangement of the digestion, and biliary secretion, gastric irritability, &c. The effect of these melancholy emotions is to unhinge the balance of the circulation, and give origin to internal concentrations of blood. The cutaneous vessels become almost exsanguious, and it is under such circumstances that we see rupture of the parietes of the heart, or fatal congestions in some of the other viscera. Here an explosion of the hæmorrhoidal flux may often ward off the impending danger."

Under the head of *medicinal causes* of hæmorrhoids, Dr. Montegre enumerates the frequent use of aloes, rhubarb, neutral salts [on the authority of Hildebrandt,] emmenagogues, certain mineral waters, glysters, &c.

Miscellaneous Causes. Long and fatiguing marches on foot; violent horse exercise [gentle horse exercise is one of the most powerful anti-hæmorrhoidal measures] sudden impression of heat or cold on the region of the fundament; the too frequent application of leeches to the anus; the inordinate use of foot baths; [and we may add of biddies]; the use of hollow seats [usage d'un siege perce]; and lastly, according to the opinion of De Haen, the effluvia from privies while seated at stool.

Sect. 5. Prognosis.

In this section Dr. Montegre enters deeply into the argument that, speaking generally, hæmorrhoids are salutary efforts of the constitution, although they may often, like many other sanative processes, prove injurious, or even fatal. Attentive observation will show that, in the present state of society, almost every individual of the human race has some one organ or part of the body more weak, more irritable, or more predisposed to disease than the rest; and that this part is usually an important viscus of vital function. This con-

sideration will induce the pathologist to acknowledge, that the hæmorrhoidal movement and discharge are, upon the whole, productive of salutary effects, as determining this irritation or local plethora to a part where it may be expended with safety, though with inconvenience or pain.

Let us apply this reasoning. M. Bayle and others have shown, that pulmonary consumption carries off a fifth part of the human species. Without entering into a disquisition on the nature of phthisis, it will be very generally allowed, that it consists essentially and originally in a *sanguineous determination* to the respiratory apparatus, however slow or insidious its progress. Now, granting that the causes, whatever they may be, which induce such a wide wasting disease, are operating with more or less intensity on all classes, we have strong reasons for believing that the hæmorrhoidal movement preserves, in a considerable number of cases, the lungs from the disorganizing irritation of phthisis. This reasoning is strongly supported by the well known connexion which subsists between pulmonary consumption and fistula in ano, the latter almost constantly arresting the progress of the former; and on the contrary, very often giving origin to the pulmonic affection when suddenly cured in unsound constitutions. If, then, a *fistula in ano*, which acts like a perpetual hæmorrhoidal drain, can arrest the progress of phthisis, after it has actually been developed, as every observant practitioner must have repeatedly seen, how much reason have we to expect that an establishment of the hæmorrhoidal flux, *anterior* to phthisis, may, in many cases, avert it entirely?

The following case from Larroque may come in here as illustrative of the subject.

“A lady, previous to puberty, had all the symptoms of pulmonary consumption; but as soon as the menses were established, these symptoms disappeared, although several distinguished physicians had pronounced the case incurable. From this time till the cessation of the menstrual discharge, at the age of 45, no complaint of the chest was manifest; but at the turn of life the symptoms of phthisis were again renewed. Fortunately, at this epoch the hæmorrhoidal flux appeared, and the thoracic affection instantly gave way. Between the

age of 60 and 70, the hæmorrhoidal discharge ceased, and again returned the cough and expectoration, of which she died."

The following case, communicated to Dr. Montegre by Dr. Bodson, exhibits another example of the salutary effects of the hæmorrhoidal flux, where there is reason to fear that an important organ is on the eve of structural tension.

A man, 25 years of age, married two years, tall and thin, became affected with constant and severe pain between the shoulders, accompanied by cough and copious expectoration, emaciation, and progressively increasing debility. Notwithstanding various means, these symptoms got worse and worse, and the young man was considered to be in a confirmed consumption. The attending physician happening to recollect that the father of the patient had been hæmorrhoidiary, conceived that the establishment of such an affection might be serviceable to the son, and consequently applied six leeches to the fundament. The effect was so rapid and decisive, that it appeared as though the pulmonary disease was destroyed by a single blow. The hæmorrhoidal movement became irregularly established, he recovered flesh and strength, and continued in good health."

Indeed, since the days of Hippocrates, hæmorrhoids have been considered by accurate observers to have an anti-phthisical tendency. The Father of physic distinctly says,—*"Qui sanguinem per ora venarum, quæ sunt in ano, perfundere solent, ii neque lateris dolore neque pulmonis inflammatione corripiuntur."* *De Humor.*

From all these considerations, then, would it not be a useful indication to endeavour to establish the hæmorrhoidal discharge by aloetics, leeches, &c. in those who are predisposed to phthisical disorders in this country?

Sect. 6. Retention and Suppression of Hæmorrhoids.

The causes of these accidents may be divided into preparatory and efficient. Among the first order we may reckon the nervous temperament, great sensibility, a predisposition to morbid action in some internal organ or part, as the bladder, kidneys, liver, stomach, lungs, heart, or great vessels.

The *efficient* causes of retention are very numerous. The principal are, high inflammatory action in the system, excessive hæmorrhages, violent mental commotions, as terror, anger, &c.; the application of inordinate heat or cold to the parts; wet and cold to the feet; baths too hot or too cold, taken during the paroxysm; aliments very high seasoned or stimulating; inordinate evacuations, whether from the vascular, lymphatic, or glandular systems, as profuse venesection, great sweats, salivation, hypercatharsis, &c.; the application of irritating or astringent substances to the hæmorrhoidal tumours.

Consequences of Retention and Suppression. It must be borne in mind, that the most sudden and abrupt suppression of a long established hæmorrhoidal flux, whether by accident or by topical remedies, will, in very many cases, be followed by no inconvenience, and the patient may enjoy many years of perfect health, and immunity from the original affection. In illustration of this position we could relate numerous facts, but shall confine ourselves to one or two instances.

Case 1. "A gentlemen, 34 years of age, very robust, of a bilio-sanguine temperament, born of hæmorrhoidinary parents, and long afflicted with most violent paroxysms of the complaint, sometimes accompanied with sanguineous discharge, sometimes not, observed, that the intervals of health were always long, in proportion to the force and duration of the preceding attack. After an unusually severe hæmorrhoidal paroxysm, which was procrastinated six months, and attended with great pain, he was suddenly cured by a topical application. He has now continued five years free from hæmorrhoids and all other complaints, although he leads the same kind of sedentary life as before, and often keeps late hours."

Case 2. "My father, then 22 years of age, happening to be travelling in Italy, was afflicted several months with the most excruciatingly painful hæmorrhoids, accompanied by a sanguineous discharge and external tumours. He was cured in one night by an empirical application at Venice, and never afterwards experienced any hæmorrhoidal affection. He died of an apoplexy at the age of 78."

The prognosis, then, in cases of sudden suppression of the

hæmorrhoidal movement, must be founded on the nature and importance of the effects which follow. The suppression will be more dangerous in proportion as the individual is predisposed to any visceral affection, as phthisis, cardiac disease, aneurism of any of the large vessels, &c. Advanced age, and the turn of life in females are unfavourable epochs for such accidents.

But although immunity from disease frequently follows a suppression of the hæmorrhoids, we are by no means to calculate on such good fortune as even generally to be met with. We shall here then present a rapid sketch of the various phenomena which attentive observation has ascertained, as very frequently resulting from the suppression or retention under consideration.

1. *Fever* has, in many instances, been kindled up by the suppression of the hæmorrhoidal flux. Ludolph relates a remarkable instance:—A man of letters, 40 years of age, thin, yet plethoric, of sedentary habits, had frequently experienced the hæmorrhoidal discharge with advantage to his general health. But this discharge having become excessive, his physician suddenly suppressed it; the consequence of which was pains and sense of anguish at the præcordia, acute fever, violent delirium, and death in a few days! Stahl offers us nearly a similar example.

2. *Phlegmasiæ*. The brain or its meninges, the lungs or their coverings, the heart, the stomach, the liver, and peritoneum, are often affected with inflammation from suppressed hæmorrhoids. But chronic engorgements, with gradual induration of these viscera, are the more usual results.

3. *Hæmorrhages*. Almost every part of the body may become the seat of hæmorrhage, *vicarious* of the hæmorrhoidal flux when suppressed; but more especially the uterus, the bladder, the stomach, the liver, and the lungs.

4. *The Neuroses*. Esquirol asserts, that melancholy and insanity frequently result from the suppression of hæmorrhoidal evacuations; Poissonier, Andry, &c. saw tetanus result from the same; Heister, hypochondriacism; and, according to Dion Cassius, the Emperor Trajan experienced an attack of apoplexy, followed by hemiplegia, in consequence of a sudden

suppression of the hæmorrhoidal flux, to which he had been long subject. He soon afterwards became dropsical and died.

Sect. 7. Treatment.

1. *The Hæmorrhage.* This accident demands our attention, since its *excess* may prove dangerous or even fatal, and yet its continuance may be necessary to the constitution. As long as the flow of blood returns periodically, with considerable intervals, and without apparently injuring the health, we should be cautious how we arrest the discharge; but when it produces sudden debility, paleness, or spasms, we should endeavour to moderate the flow. It is certain, however, that the most excessive hæmorrhage in this way is rarely fatal in itself, though it may prove so consecutively. It has been justly observed, too, that the greatest hæmorrhage is often less dangerous than the means which we take to arrest it.

These means should first be *general* rather than local. The patient should be laid on a cool bed in the middle of an airy room, with few or no bed clothes, and kept in the most perfect quietude in the horizontal position, his feet a little raised; if he can lie on his face, so much the better. These precautions, with cold acidulated drink, will commonly *moderate* the discharge, which is better than suddenly checking it. If these means are unsuccessful, we must endeavour to induce a determination to some other quarter, by venesection, by cupping glasses to the shoulders, by ligatures to the upper extremities, as practised by Galen, and too much neglected by the moderns; by long continued frictions, with flesh brushes, to the upper parts of the body, especially in the latter or passive stage of the hæmorrhage. On the same principle of counter-derivation, we apply sinapisms to the inside of each arm. When these means fail, we must have recourse to *local* applications, such as cold, astringents, or plugging the rectum.

The ancients were in the habit of applying the actual cautery, and Montegre recommends the same as a last resource.

2. *The Tumours.* The great art in the treatment of hæmorrhoidal tumours is *compression*. We can assert, from personal

experience, that however large these bodies may project at stool, or at other times; if the patient lies down on his back, and makes gradual but constant pressure with his fingers, they will be almost always got within the sphincter ani, and by a T bandage well secured, with a small pad on the anus, they may be prevented from prolapsing.

The extirpation of hæmorrhoidal tumours by the knife or ligature, need not to be touched upon in this place.

3. *Hæmorrhoidal Inflammation.* If no sinister accident take place, the hæmorrhoidal inflammation commonly runs a course of six or eight days, with considerable intensity, when the tumours begin to subside, especially if a discharge of blood occurs, re-enter the anal sphincter, and the pains vanish entirely.

To moderate the inflammation of hæmorrhoidal tumours, the application of leeches to the parts is a very general practice. Dr. Montegre reprobates this remedy, and certainly we have not experienced that advantage from this mode of local bleeding that we expected. Dr. M. asserts, that instead of unloading the gorged vessels, "the effect is quite contrary—the determination of blood to the part is augmented considerably, together with all the consequences of this determination." *L'effet en est ordinairement tout contraire; la fluxion est presque toujours considérablement augmentée, &c.* To the *loins* he advises the leeches to be applied, where they will have the effect of degorging locally, without producing irritation by their bites.

The application of cupping glasses, with or without scarification to the shoulders, or hypochondria, are recommended as very useful derivatives in excessive hæmorrhoidal discharges. Warm fomentation or half-baths, though popular, are in general hurtful remedies. M. Recamier has seen the tumours become gangrenous from their use.

We have, ourselves, however, seen very good effects from emollient cataplasms in painful hæmorrhoidal swellings, that could not be pressed within the sphincter ani.

While these means are used, the patient should take mild cooling laxatives internally, as supertartrite of potash, tamarinds, manna, sulphur, &c. with cool diluting drinks.

4. *Hæmorrhoidal Pains*. Dr. Montegre calls the attention of the Faculty to the use of injections of cold water, or water with the chill off it, together with semicupia of the same, in those hæmorrhoidal pains attending the fæcal evacuation, accompanied or not with inflammation, which are so distressing to many people. He considers this remedy as, by far, superior to every other, while it is totally devoid of danger or inconvenience. We think this hint worth attending to.

5. *Equitation*. Although violent horse exercise will often occasion hæmorrhoids in those who are not accustomed to ride, yet there is not a more powerful remedial measure, when moderately used, than this. Indeed, no man need suffer from the piles who can keep a horse.

7. *Hæmorrhoidal Colic*. As this is occasioned by a determination of blood to the mesenteric vessels, there is no more speedy means of relief than by establishing the hæmorrhoidal discharge, by the application of leeches to the anus, warm emollient glysters, and purgatives.

8. *Constipation*. This is not only a very frequent cause of hæmorrhoids, but it is an accompaniment which renders the complaint one of the most painful afflictions of human nature.

General Remedies. Every thing which augments the cutaneous transpiration, and increases the activity of the absorbents of the intestinal canal; or, on the other hand, diminishes the secretory office of the mucous membrane of the intestines, tends to constipation. Hæmorrhoidinarians, therefore, ought to avoid all violent and unaccustomed exercises which cause much perspiration, as also hot and vapour baths. The diet, must, of course, vary according to the idiosyncrasy of the patient.

Of laxative medicines, the best are the tartrite of potash with sulphur and supertartrite of potash in molassess, as an electuary at night. But *injections of cold water* are, of all other remedies, by far the most efficacious. These injections should be small in quantity, not more than sufficient to fill the rectum.

In respect to the constitutional treatment of the hæmorrhoidal movement itself, it is needless to observe, that as our author considers this movement a salutary one, he rarely ad-

vises any means of counteracting it. On the contrary, where phthisis, apoplexy, or any organic disease of an internal viscus threatens the patient, D. M. thinks that a hæmorrhoidal discharge ought to be induced, or renewed, if suppressed.

We shall conclude this paper by an abstract of Dr. Montegre's

General rules of conduct for the Hæmorrhoidinarian.

A. A temperate climate agrees best with the hæmorrhoidinary constitution. Too much heat stimulates the biliary system, weakens the digestive organs, and tends to constipation, by rendering the perspiration inordinate. A very cold climate, especially if moist, is also unfavourable to this complaint. Apartments heated and close, and transitions from thence to the cold air, ought to be particularly avoided.

B. The tepid, but not the hot bath, ought to form a part of hæmorrhoidinary regimen. In the intervals of the attack, the cold bath is extremely serviceable.

C. The local application of cold water to the fundament, every day, by means of a sponge, especially after going to stool, and when the tumours come out during the alvine evacuations, ought never to be neglected by the hæmorrhoidinarian.

D. The *clothing* should be such as is suitable in rheumatic complaints. Flannels next the skin, so as to favour the insensible perspiration, and defend the patient from abrupt atmospheric transitions, are necessary articles of dress. The bedding should be neither too soft nor too warm; and the hæmorrhoidinarian should avoid sitting on a seat that is either very damp and cold, or heated by the rays of the sun.

E. The *food* should not partake much of the hot, spicy, or stimulating; and the drink should be as aqueous as possible.

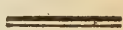
F. *Exercise*. Of all exercise, that of riding on horse-back is best. The swing is also useful.

G. "*L'acte venerien* est évidemment utile aux hemorroidaires à moins qu'il ne soit repètè d'une maniere excessive, ce qui incommode tout le monde."

H. The moral affections have a great and predominant in-

fluence on the hæmorrhoidal state. They ought, therefore, to be attended to as much as possible, and kept in due bounds, though this is seldom within our power.

We have thus condensed the more important features of this long and interesting article in the French work; and we trust that we have, in so doing, rendered a service to the British medical reader.



1. *Observations on the Geology of the United States of America.* By WILLIAM MACLURE. Philadelphia, 1817. 8vo. pp. 127.
2. *An Elementary Treatise on Mineralogy and Geology.* By PARKER CLEAVELAND, Professor of Mathematics and Natural Philosophy, and Lecturer on Chemistry and Mineralogy, in Bowdoin College. Boston, 1816. 8vo. pp. 668.

[From the Edinburgh Review, for September 1818.]

IN a former number,* we gave an account of a new Mineralogical Journal, published in America by Dr. Bruce of New York. We hailed the appearance of this work as a proof of the attention that had been excited to this interesting branch of science, in a field so sure to yield an abundant harvest; and it was with regret that we learned, that a Journal which promised so well at its outset, had very soon been discontinued.

We have now great pleasure in introducing to the notice of our readers, two very excellent publications, which abundantly prove, that the study of Mineralogy is pursued with no less eagerness and success in the United States, than it has been for some years past in most of the countries of Europe. There is not perhaps any department of Science which, at the present time, merits a greater degree of attention in that great and prosperous country, from its various practical applications to some of the most important sources of national wealth and power;

* Vol. xvii. p. 114.

and the more especially that, from the limited researches already made, Nature appears to have added, in abundance, some of her most valuable mineral productions to the other internal resources which she has lavished in that part of the world.

The geological part of Mr. Maclure's book was first published in the sixth volume of the American Philosophical Transactions; in the present edition there are some additions and corrections, besides two new chapters, which the author informs us in his Preface, are 'an attempt to apply Geology to Agriculture, in showing the probable effects the decomposition of the different classes of rocks may have on the nature and fertility of soils. It is the result of many observations made in Europe and America, and may perhaps be found more useful in the United States than in Europe, as more of the land is in a state of nature not yet changed by the industry of man.'

Mr. Maclure appears to be very thoroughly conversant with his subject, and to have studied with great attention the geological structure of a considerable part of Europe. He is a disciple of Werner; but we recognise him as such, more by the descriptive language he employs, than by his theoretical opinions. His general views are much more enlarged and philosophical, than is usually met with in the geologists of that school; and, like most of those who have had opportunities of extensive observation, he has found that the theory of the Freyberg professor is of a very limited application. The following remarks in his Preface are a sufficient proof that his geological creed is not that of Werner.

"In all speculations on the origin, or agents that have produced the changes on this globe, it is probable that we ought to keep within the boundaries of the probable effects resulting from the regular operations of the great laws of nature, which our experience and observation have brought within the sphere of our knowledge. When we overleap those limits, and suppose a total change in Nature's laws, we embark on the sea of uncertainty, where one conjecture is perhaps as probable as another; for none of them can have any support, or derive any authority from the practical facts wherewith our experience has brought us acquainted."

While we acknowledge the valuable information which this

little work conveys, we cannot bestow any praise on the manner in which the materials are put together. There is a great want of method and arrangement; for, although the author has laid down a very good plan, he has not adhered to it, but has mixed up one part of his subject with another, so as to cause considerable confusion; and were it not for the accompanying coloured map, it would often be very difficult to comprehend his descriptions. In attempting to give a sketch of the contents of the book, as we cannot afford the same assistance to our readers, we shall not follow the author in these deviations, but preserve the order in which it appears to have been his original intention that his observations should be set down.

Along the eastern side of the Continent of North America, there runs an extensive range of mountains, generally called the Alleghany, in a direction nearly NE. and SW. between the rivers St. Lawrence and Mississippi. The most elevated parts of the range are in the North-eastern States: the White Hills in New-Hampshire appear to be the most lofty, and their height is somewhat more than 6000 feet above the level of the sea. The most elevated parts, as well as the greatest mass of this range consist of primitive rocks; but, as it approaches the Hudson river, and where it traverses the State of New-Jersey, these rocks decrease in height and breadth. In Pennsylvania and Maryland, the primitive rocks occur sparingly, the highest parts of the range consisting of transition rocks, with some intervening valleys of secondary. In Virginia, the primitive rocks increase in breadth and in height; and they form the greatest mass, as well as the most elevated points, of the range of mountains in the States of North Carolina and Georgia, where it takes a more westerly direction.

“ Besides this great range, there is an extensive district, occupied by primitive rocks on the west side of Lake Champlain, having that Lake, and Lake George for a boundary on the east, joining the primitive rocks in Canada to the north and north west, and following a line from the Thousand Islands in the St. Lawrence, running nearly parallel to the Mohawk river, until it meets Lake George on the south west. These primitive rocks run across the Mohawk at the Little Falls, and near Johnstown on the Mohawk, where they are covered by lime-

stone; they occupy all the mountainous country between Lake Champlain, the St. Lawrence, and Lake Ontario." p. 38.

"From near Kingston on Lake Ontario, to some distance below Quebec, the country is principally primitive; and, from all information I could collect, that great mass of continent lying to the north of the 46th degree of latitude, for a considerable distance to the west, consists mostly of the same formation: from which it is probable, that on this continent, as well as in Europe and Asia, the Northern regions are principally occupied by the primitive formation." p. 58.

Throughout the greatest part of the northern and north-eastern States, the sea washes the primary rocks; but at Long Island there commences an alluvial formation, which, increasing in breadth as it stretches southward, covers a great part of both the Carolinas and Georgia, and almost the whole of the two Floridas and Lower Louisiana. This vast alluvial formation is bounded on the east by the ocean, and by a line commencing at the eastern end of Long Island and passing through Philadelphia, Washington, Richmond in Virginia, Halifax in North Carolina, Columbia in South Carolina, Augusta on the Savannah, and thence to Natchez on the Mississippi. The tide water ends in all the rivers from the Mississippi to the Roanoke at the distance of from thirty to 120 miles from the western limits of the alluvial formation; from the Roanoke to the Delaware, the tide penetrates through the alluvial, and is stopped by the primitive rocks. In all the northern and eastern rivers, the tide runs a small distance into the primitive formations. In the Southern States the alluvial formation is elevated considerably above the level of the sea; but as it approaches the north, it rises very little above it.

On the western side of the great range of mountains, there is a long narrow zone of transition rocks, beginning on the eastern side of Lake Champlain, and extending in an undulating line in a south-westerly direction, to a point between the Alabama and Tombigbee rivers, in latitude about 34 N. and longitude about 85 W. It is generally broadest where the primitive formation is narrowest, and *vice versa*; and runs from twenty to a hundred miles in breadth.

On the north-west of those transition rocks commences an

immense region of secondary rocks, extending beyond Lake Superior to the north, and some hundred miles beyond the Mississippi to the west, not far distant from the foot of the Stony Mountains, forming an area of about fifteen hundred miles from east to west, and about twelve hundred miles from north to south.

The Volcanic Fires which constitute so grand a feature in the Geological History of South America, have not extended their dominion to the northern continent, nor have any productions been discovered which indicate that volcanoes have at any time existed there.

The direction of the stratification in the primitive rocks runs nearly north and south, eastward of the state of New-York, with an eastern dip. In the State of New-York and to the south and west, the stratification runs nearly NE. and SW., the dip still continuing to the east. The dip is generally at a greater angle than 45° , and sometimes the strata are almost vertical. The direction of the strata in the transition rocks is also from north and south to north-east and south-west, dipping generally to the north-west, at an angle in most places under 45° . On the edge of the primitive rocks, there is a deviation in some places from this general rule; the dip being, for a short distance, to the south-east. The outline of the mountains of this formation is almost a straight line, with few interruptions, bounding long parallel ridges of nearly the same height, declining gently towards the side where the stratification dips from the horizon, and more precipitous on the opposite side where the edge of the stratum breaks out to the day.

Of the primitive rocks Granite forms but a small part; but it is found both on the tops of the mountains and in the plains. There are many varieties of it, in regard to the size of its constituent parts; and it is occasionally mixed with hornblende. This latter variety, by some geologists, would be called a Sienite; but its geological position is the same as the compound of quartz felspar and mica, which, by the same geologists, is considered as the only true primitive granite. In mentioning this variety, Mr. Maclure remarks, that

“The rounded globules of felspar and hornblende found in

the great masses of granite of the Alps, in Cornwall and in this country, could not be distinguished, in hand specimens, from the Sienite of Werner, though the one is placed in the Wernerian system as the oldest, and the other among the newest of the primitive rocks."

The granite generally divides into rhomboidal masses, and, except in some very small-grained varieties, there is no appearance of stratification. It is frequently so far decomposed as to have lost the adhesion of its particles, to the depth of 30 or 40 feet below the surface; each crystal is in its place, and looks as if it were solid; but when you take it up, it falls into sand.

Gneiss extends over a half of the primitive formation. It includes in a great many places beds from three to three hundred feet thick, of a very large-grained granite, which run in the same direction, and dip as the gneiss does. These beds are mixed, and alternate occasionally in the same gneiss, with primitive limestone, beds of hornblende and hornblende slate, serpentine, felspar rocks, and magnetic iron ore. In some places the gneiss contains so much mica as to run into mica slate; in others, large nodules of quartz or felspar, and, in others, hornblende takes the place of mica.

"Though the primitive formation contains all the variety of primitive rocks found in the mountains of Europe, yet neither their relative situation in the order of succession, nor their relative heights in the range of mountains, correspond with what has been observed in Europe. The order of succession from the Clay slate to the Granite, as well as the gradual diminishing height of the strata, from the granite through the gneiss, mica slate, hornblende rocks, down to to the clay slate, is often so inverted and mixed, as to render the arrangement of any regular series impracticable." p. 16.

Within the limits of what may be termed the primitive country, there are found several partial and detached formations of the transition and secondary rocks. A transition formation occupies nearly the whole of Rhode Island, and runs from Rhode Island to Boston, fifteen miles broad. There is a range of secondary rocks, extending, with some intervals, from the Connecticut to the Rappahannock rivers, a distance of near-

ly four hundred miles; and in width, generally from 15 to 25 miles. It appears to belong to the old red sandstone formation of Werner. A formation of transition rocks runs nearly southwest from the Delaware to the Yadkin river, from two to fifteen miles broad, consisting of beds of blue, grey, red, and white small-grained limestone, alternating with beds of greywacke and greywacke slate, quartzose granular rocks, and a great variety of the transition class. Much of this limestone contains so much small-grained sand, as to resemble a dolomite; and, in many places, considerable beds of fine-grained white marble. fit for the statuary, occur. About ten or twelve miles west of Richmond in Virginia, there is a coal formation, lying upon, and surrounded by primitive rocks. It is situated in an oblong basin, from twenty to twenty-five miles long, and about ten miles wide, having the whitish freestone, slaty clay, &c. with vegetable impressions, as well as most of the other attendants of that formation.

Great varieties of mineral substances are found in the primitive formation; and, from the number already found, in proportion to the limited researches that have been made, it is probable, that, in so great an extent of rocks of a crystalline structure, almost every mineral substance discovered in similar situations elsewhere, will be found in this country. Metallic substances are found in considerable abundance in the primitive rocks—iron, copper, manganese and cobalt. The general nature of metallic repositories in this formation appears to be in beds, disseminated through the rock, or in lying masses. Veins to any great extent have not been discovered in any part of this formation.

“The transition rocks consist of a small-grained limestone, of all the shades of colour, from white to dark blue, in some places intimately mixed with strata of greywacke-slate; lime spar in veins and disseminated; in many places an intermixture of small-grained particles, so as to put on the appearance of a sandstone, with excess of lime cement. This occurs in beds from fifty to five thousand feet in width, alternating with greywacke and greywacke-slate. Near the borders of the primitive is found a siliceous aggregate, having particles of a light blue colour, from the size of a pin’s head to an egg, dis-

seminated in some places in a cement of a slaty texture, and in others in a quartzose cement; a fine sandstone, cemented with quartz in large masses, often of a slaty texture, with small detached scales of mica intervening; a rock not far from the borders of the primitive, partaking both of the porphyry and the greywacke, having both felspar crystals and rounded pebbles in it, with a cement of a kind of dull chlorite slate in excess; another, though rarer, with pebbles and felspar crystals, in a compact petrosiliceous cement, and a great variety of other rocks, which, from their composition and situation, cannot be classed but with the transition.

“The limestone, greywacke, and greywacke-slate, generally occupy the valleys, and the quartzzy aggregates the ridges. There are many and extensive caves in the limestone, where the bones of various animals are found.

“Beds of coal blende, or anthracite, accompanied by alum slate and black chalk, have been discovered in this formation, on Rhode Island, the Lehigh and Susquehannah rivers, and a large body of alum slate on Jackson’s river, Virginia; many powerful veins of the sulphate of barytes cross it in different places.”—“Iron and lead have as yet been the principal metals found in this formation; the lead in the form of Galena, in clusters, or what the Germans call *Stockwerk*, as at the lead mines on New river, Wythe county, Virginia; the iron disseminated in pyrites, hematitic and magnetic iron; or in beds; and considerable quantities of the sparry iron ore in beds, and disseminated in the limestone.” p. 51.

The immense basin to the west of the Alleghany mountains, through which so many mighty rivers flow, is wholly composed of secondary rocks, without having their continuity interrupted by any other formation, except the alluvial deposits on the banks of the large rivers. The stratification is almost perfectly horizontal.

“Immense beds of limestone, of all the shades, from a light blue to a black, intercepted in some places by extensive tracts of sandstone, and other secondary aggregates, appear to constitute the foundation of this formation, on which reposes the great and valuable coal formation, which extends from the head waters of the Ohio in Pennsylvania, with some interrup-

tion, all the way to the waters of the Tombigbee, accompanied by the usual attendants, slaty clay and freestone, with vegetable impressions, &c.; but, in no instance that I have seen or heard of, covered by, or alternating with, any rock resembling basalt; or indeed any of those called the newest floetz trap formation.

“The limestone of this formation contains irregular pieces in nodules and bands, of a kind of black flint (like what is called *Chert* in England), scattered in all forms and directions, often resembling the limestone in colour, in which case it is with difficulty they can be distinguished; they abound on the banks of Lake Erie, on the banks of St. Lawrence, whence it runs from Lake Erie, and, generally through the whole stratification of Limestone.

“Along the south-east boundaries, not far from the transition, a rock salt and gypsum formation has been found. On the north fork of the Holstein river, not far from Abingdon, Virginia, and on the same line south-west from that, in Greene county and Pigeon river, state of Tennessee, it is said quantities of gypsum have been discovered; from which, and the quantities of salt licks and salt springs found in the same range, so far north as Lake Oneida, there is some probability that this formation is upon the same great scale that almost all the other formations have been found on this continent,—at least rational analogy supports the supposition; and we may hope one day to find an abundance of those two most useful substances, which are generally found mixed, or near each other, in all countries that have hitherto been carefully examined.” p. 35.

“There are a great many detached masses of granite and sienite, scattered over the surface of that part of the basin which lies to the north of the Ohio river, but runs to the south; from which it is probable that they have come from the north, perhaps from the primitive mountains north of the great lakes.” p. 120.

The alluvial country, eastward of the Alleghany mountains, is composed of beds of sand, gravel and clay, differing in their nature, according to that of the adjoining rocks, from the disintegration of which they have been produced. They contain

both animal and vegetable remains, which are found to the depth of nearly a hundred feet below the surface. Considerable banks of shells, mostly bivalves, run parallel to the coast, imbedded frequently in a soft clay or mud, resembling that in which the living animal is now found on the sea shore, and which makes the supposition probable that they are of the same species.

“There is also a bank of shell limestone beginning in North Carolina, parallel to, and within the distance of from twenty to thirty miles of the edge of the primitive, through South Carolina, Georgia, and part of the Mississippi territory. In some places this bank is soft, with a large proportion of clay; in others hard, with a sufficiency of the calcareous matter to be burnt for lime. Large fields of the same formation are found near Cape Florida, and extending some distance along the coast of the bay of Mexico. In some places the calcareous matter of the shells has been washed away, and a deposit of silicious flint, in which they were imbedded, is left, forming a porous flinty rock, which is used with advantage for millstones.

“In the alluvial of New-Jersey, about ten or twenty feet under the surface, there is a kind of greenish blue marl, which they use as manure, in which they find shells, as the Ammonite, Belemnite, Ovulite, Cama, Ostrea, Terebratula, &c. Most of these shells are similar to those found in the limestone and greywacke of the transition, and equally resemble those found in such abundance in the secondary horizontal limestone and sandstone; from which it would follow, that the different classes of rocks on the Continent cannot be distinguished by their shells, though the different strata of the same class may be discovered and known by the arrangement of the shells found in them.

“Considerable deposits of bog iron ore occupy the lower situations; and many of the more elevated and dividing ridges between the rivers are crowned with a sandstone and puddingstone, the cement of which is bog iron ore.”

From the interesting and instructive sketch which Mr. Maclure has given of the Geology of so large a portion of the Continent of North America, we obtain an important addition to the evidence we already possess in proof of the uniformity

of structure which seems to prevail over the whole surface of our globe. No new formation has been discovered, nor any predominant rock which this experienced geologist has had any difficulty in recognising as identical with what he had seen in every part of the Continent of Europe. There are, however, two remarkable peculiarities in the country our author has described, which distinguish it from any other of the same extent with which we are acquainted. These are, the very rare occurrence of the trap-rocks and porphyries, and the great extent to which the same series of rocks stretch, without undergoing any change in the uniformity of their composition, and without any disturbance in the regularity of their stratification. When we combine this undisturbed state of the strata with the absence of a class of rocks which are almost invariably accompanied, in other countries, by a dislocation and confusion of the adjoining strata, it must be considered an argument of considerable weight in support of that theory of the origin of the trap-rocks, which supposes them to have been ejected from below, and to have broken up and insinuated themselves among the superincumbent strata. But this is a point of theory supported by so great a body of evidence, that we presume there is now no geologist so bigoted to the aqueous creed as to refuse his assent to it.

The *Elementary Treatise* of Mr. Cleaveland is a work of considerable merit. He has derived his materials, as he informs us, chiefly from the works of Haüy, Brochant, Brongniart, Lucas, Kirwan, and Jameson; but he has adopted Brongniart as his model; and, in doing so, we think he has followed the most judicious and most useful of all the mineralogical writers who have preceded him. We entirely concur in the following remarks on the *Treatise* of Brongniart by the author in his Preface.

“Many of the writers of the French and German schools appear to have indulged an undue attachment to their favourite and peculiar system, and have hereby been prevented from receiving mutual benefit; the one being unwilling to adopt what is really excellent in the other. But it is believed, that the more valuable parts of the two systems may be incorporated, or, in other words, that the peculiar descriptive language

of the one may, in a certain degree, be united to the accurate and scientific arrangement of the other. This union of descriptive language and scientific arrangement has been effected with good success by Brongniart, in his *System of Mineralogy*—an elementary work, which seems better adapted both to interest and instruct, than any which has hitherto appeared.”

Although this book is necessarily compiled, in a great degree, from the writings of others, it contains much valuable information respecting the mineral productions of the United States. It is to this part of the work that we shall confine our remarks; and we feel disposed, for the sake of our general readers, to dwell chiefly on the information Mr. Cleaveland conveys respecting those mineral substances that are connected with the advancement of that active and enterprising people in wealth and political importance, rather than upon the rarer productions, which are only interesting to the mineralogist.

There is one merit of Mr. Cleaveland's book that ought not to pass unnoticed; we mean the form in which it is published: It is printed upon excellent paper, with a neat and perfectly distinct small type; and the same matter is contained in one volume, which, in England, would have been scattered over the surface of three. We should be glad to see it reprinted exactly upon the plan of the original; and we have no doubt that it would be found the most useful work on mineralogy in our language.

Coal exists in several parts of the United States in great abundance. We have already spoken of the vast series of coal strata westward of the Alleghany range, and of an extensive coal formation near Richmond in Virginia. In Pennsylvania, it is found on the west branch of the Susquehannah; in various places west of that branch; also on the Juniata, and on the waters of the Alleghany, and Monongahela. In Connecticut, a coal formation, commencing at New-Haven, crosses Connecticut river at Middletown, and, embracing a width of several miles on each side of the river, extends to some distance above Northampton, in Massachusetts. There are also indications of coal in the States of New-York and New-Jersey. In Rhode Island, anthracite is found, accompanied by argillaceous sandstone, shale with vegetable impressions, &c. similar

to the usual series of coal strata. The coal at Middletown, in Connecticut is accompanied by a shale which is highly bituminous, and burns with a bright flame.

“It abounds with very distinct and perfect impressions of fish, sometimes a foot or two in length; the head, fins, and scales, being perfectly distinguishable. A single specimen sometimes presents parts of three or four fish, lying in different directions, and between different layers. The fish are sometimes contorted, and almost doubled. Their colour, sometimes grey, is usually black; and the fins and scales appear to be converted into coal. The same shale contains impressions of vegetables, sometimes converted into pyrites.”

Neither Mr. Cleaveland nor Mr. Maclure give us any information respecting the extent to which the coal has been wrought in any of the numerous places where it has been found, or the thickness of the seams. A scarcity of wood for fuel must be felt before coal will be sought after with much spirit; and there is probably still wanting in the United States that profusion of capital which can be risked in the uncertain operations of mining.

Iron is found in the United States in a great variety of forms, and is worked to a considerable extent. In the year 1810, there were five hundred and thirty furnaces, forges, and bloomeries, in the United States, sixty-nine of which were in the State of New-York; and the iron manufactured at Ancram, New-York, is said to be superior, for many purposes, to the Russian and Swedish iron. It is made from a hematitic brown oxide. Mr. Maclure informs us, that there is a bed of magnetic iron ore, from eight to twelve feet thick, wrought in Franconia, near the White Hills, New-Hampshire; that there is a similar bed in the direction of the stratification, six miles north-east of Philipstown, on the Hudson river; and, still following the direction of the stratification, that the same ore occupies a bed nearly of the same thickness at Ringwood, Mount Pleasant, and Suckusanny, in New-Jersey; losing itself, as it approaches the end of the primitive ridge, near Blackwater—a range of nearly three hundred miles. This immense deposit of iron ore is contained in gneiss, and is accompanied by garnet, epidote, and hornblende. In the State of New-York, mag-

netic iron ore is found in immense quantities on the west side of Lake Champlain, in granitic mountains. The ore is in beds, from one to twenty feet in thickness, and generally unmixed with foreign substances: large beds of this ore extend, with little interruption, from Canada to the neighbourhood of New-York. Clay ironstone is met with in considerable quantities. In Maryland, there are extensive beds of it three miles SW. of Baltimore, composed of nodules formed by concentric layers. Bog iron ore occurs in such abundance in many places, as to be smelted to a great extent.

Copper in the native state, and most of its ores, have been found in different parts of the United States; but there are no mines of this metal except in New-Jersey, and these do not appear to be worked with much success.

Lead has been discovered in a great variety of forms; and there are several extensive mines of it. In upper Louisiana, at St. Genevieve, on the western bank of the Mississippi, there are about ten mines. The ore, which is a sulphuret, is found in detached masses of from one to five hundred pounds, in alluvial deposits of gravel and clay, immediately under the soil; and sometimes in veins or beds, in limestone. One of the mines produces annually about 245 tons of ore, yielding $66\frac{2}{3}$ per cent. There are mines also at Perkiomen, in Pennsylvania, 24 miles from Philadelphia. The ore is chiefly a sulphuret; but it is accompanied by the carbonate, phosphate, and molybdate. In Massachusetts, there is a vein of galena, traversing primitive rocks, six or eight feet wide, and extending twenty miles from Montgomery to Hatfield. The ore affords from 50 to 60 per cent. of lead.

Gold has only been found in North Carolina. It occurs in grains or small masses, in alluvial earths, and chiefly in the gravelly beds of brooks, in the dry season; and one mass was found weighing 28 lib. In 1810, upwards of 1340 ounces of this gold, equal in value to 24,689 dollars, had been received at the mint of the United States.

Native silver, in small quantities, is met with at different places, but in no other form. Mercury and tin have not been found. Cobalt occurs near Middletown, in Connecticut; and a mine of it was at one time worked. Manganese and antimo-

ny are found in several situations. Sulphuret of zinc is found in considerable quantity in Maryland, Pennsylvania, New-Jersey, and Massachusetts. In New Jersey, a new variety of this metal has been discovered, in such abundance, that it promises to be a very valuable acquisition to the United States. It is a red oxide, composed, of zinc 76, oxygen 16, oxides of manganese and iron 8. It is reduced without difficulty to the metallic state.

The chromate of iron, both crystallized and amorphous, occurs in different situations; particularly near Baltimore, and at Hoboken, in New-Jersey. This mineral is employed to furnish the chromic acid, which, when united with the oxide of lead, forms chromate of lead—a very beautiful yellow pigment, of which there is a manufactory at Philadelphia. It is sold under the name of chromic yellow, and is employed for painting furniture, carriages, &c.

In the former part of this article, we have noticed the vast extent of limestone of different species that is spread over the United States. Mr. Cleaveland enumerates several varieties of the primitive limestones in the Eastern States, which are used as marble in ornamental architecture and in sculpture; but he remarks, that the state of the arts has not yet caused them to be extensively quarried, or even sufficiently explored. Some of the Vermont marbles are as white as the Carrara, with a grain intermediate between that of the Carrara and Parian marbles. At Middlebury, in Vermont, during the years 1809 and 1810, 20,000 feet of slabs were cut by one mill, containing 65 saws; and the sales of marble, during the same period, amounted to about 11,000 dollars. In Rhode Island it is found snow white, of a fine grain, translucent, and perfectly resembles the Carrara marble.

Gypsum, or plaster stone, is found in Virginia, Maryland, and Connecticut. It is very abundant in several parts of the State of New-York, particularly in Onondago and Madison counties; also in the vicinity of Cayuga lake, whence, in 1812, 6000 tons of it were exported to Pennsylvania. In many parts of the United States, it has been found an important article of manure in the cultivation of grasses, roots and grain.

Rock salt has not hitherto been discovered; but there are

numerous salt springs. These sometimes flow naturally; but are more frequently formed by sinking wells in those places where the salt is known to exist, as in certain marshes and in salt *licks*, so called from having been formerly the resort of wild animals to *lick* the clay impregnated with the salt. These springs are chiefly found in the country westward of the Alleghany mountains, near the rivers which flow into the Ohio. They occur also in the State of New-York, near the Onondago and Cayuga lakes, associated with the great gypsum formation already noticed. This brine is strong, and yields about 300,000 bushels of salt annually. The whole quantity of salt annually obtained from saline springs in the United States, exceeds 600,000 bushels.

Nitrate of potash, or saltpetre, is met with in considerable abundance. Mr. Cleaveland gives the following description of the situations where it is principally obtained.

“The calcareous caverns which abound in the State of Kentucky, furnish large quantities of nitre. The earths which exist in these caverns, and which contain both the nitrate of potash and the nitrate of lime, are lixiviated; and the lixivium is then made to pass through wood ashes, by the alkali of which the nitrate of lime is decomposed.* After due evaporation, the nitre is permitted to crystallize. One of the most remarkable of these caverns is in Madison county, on Crooked Creek, about sixty miles SE. from Lexington. This cavern extends entirely through a hill, and affords a convenient passage for horses and waggons. Its length is 646 yards, its breadth is generally about 40 feet, and its average height about 10 feet. One bushel of the earth in this cavern commonly yields from one to two pounds of nitre; and the same salt has been found to exist at the depth of 15 feet: even the clay is impregnated with nitrate of lime.

“Kentucky also furnishes nitre under a very different form, and constituting what is there called the *rock ore*, which is in fact a sandstone richly impregnated with nitrate of potash. These sandstones are generally situated at the head of narrow

* “It appears that two bushels of ashes, made by burning the dry wood in hollow trees, contain as much alkali as eighteen bushels of ashes obtained from the oak.”

valleys which traverse the sides of steep hills. They rest on calcareous strata, and sometimes present a front from 60 to 100 feet high. When broken into small fragments, and thrown into boiling water, the stone soon falls into sand, one bushel of which, by lixiviation and crystallization, frequently yields 10 lib. and sometimes more than 20 lib. of nitrate of potash. The nitrate obtained from these rocks contains little or no nitrate of lime, and is said to be superior for the manufacture of gunpowder to that extracted from the afore-mentioned earths."

"Masses of native nitre, nearly pure, and weighing several pounds, are sometimes found in the fissures of these sandstones, or among detached fragments. Indeed, it is said that these masses of native nitre sometimes weigh several hundred pounds. Similar caverns occur in Tennessee, and in some parts of Virginia and Maryland."

With the exception of the red oxide of zinc, and the native magnesia, the discovery of which by Dr. Bruce we noticed in our account of his Mineralogical Journal, no simple minerals have hitherto been discovered in the United States that were not already known to exist in other parts of the world. There are some of the simple minerals, however, which are found in a state of great perfection, such as the cyanite, green tourmaline and rubellite, melanite, precious serpentine, garnet and beryll. A mass of native iron has recently been found near Red River in Louisiana. The form is irregular; its length being three feet four inches, and its greatest breadth two feet four inches—its weight exceeds 3000 lib. Its surface is covered with a blackish crust, and is deeply indented. It is very malleable and compact; but it is unequally hard, some parts being easily cut by a chissel, while others have nearly the hardness of steel. Its specific gravity is 7.40. It contains nickel, and is less easily oxidated than purified iron. This is rendered particularly interesting, by its containing in its interior octahedral crystals, which may be easily cut by a knife, and are striated like magnetic iron. The largest crystal is more than half an inch in length.

We look forward with great hopes to the active exertions of our Transatlantic brethren in this interesting field of scientific inquiry; and we shall expect to see the great outline they

have traced, filled up by those detailed examinations of particular districts, where the nature and mutual relations of the different rocks have been diligently and accurately studied. The country occupied by the Granite deserves particular attention, from the fundamental point of theory connected with the history of this rock:—whether, in those situations where it appears to be the lowest rock, there is any evidence of its having been formed subsequently to the strata that cover it;—if any veins are seen to proceed from the great body of the granite, and to penetrate with numerous ramifications the superincumbent rocks, as has been observed in most situations where granite occurs. The great alluvial formation will doubtless afford many valuable illustrations of the changes which the surface of our globe has undergone, from the animal remains with which it is said to abound; and we trust that this important subject of inquiry will be investigated with the attention it deserves. We should be glad to hear of the establishment of a Geological Society, to excite the zeal, and unite the labours of the Geologists of America, and to be the organ of communication between them and the rest of the Scientific World.

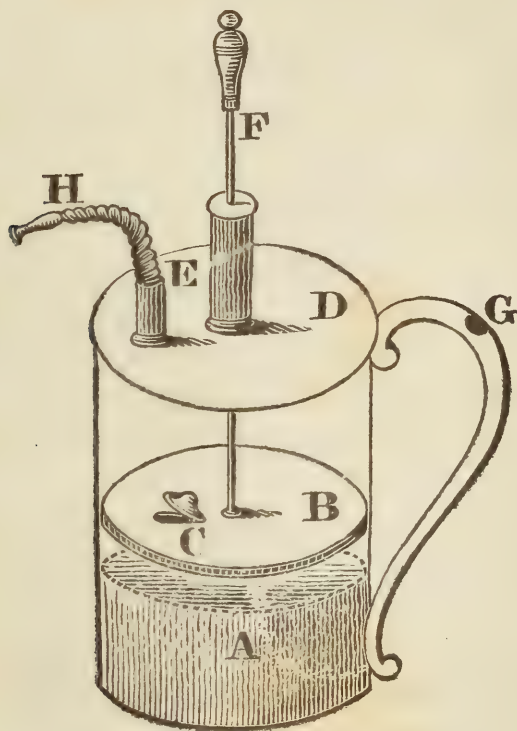
ORIGINAL PAPER.

FOR THE ECLECTIC REPERTORY..

Pons Reading Farm, January 18th, 1819.

DEAR SIR,

I have sometimes thought persons in a weak state of health who have occasion to make use of the Inhaler now in common use, are not always able to draw in a sufficient quantity of steam to answer the intention of it, without being too much exhausted. In order to remedy the evil, I would propose for your consideration, one made on the plan of the drawing enclosed. If it should be found to answer a good purpose, I shall feel myself gratified in having contributed a mite that may in any wise be useful to my fellow creatures.



A is a small cylinder to contain hot water up to the dotted line; B a piston with the valve C in it, that opens when the piston descends, and through which the steam rises above the piston, at the same time the valve at E shuts; when the piston B rises the valve C shuts, and that of E opens and throws the steam into the lungs through the pipe H, and at the same time the air rushes in the hole G and through the handle, into and through the water at the bottom of the cylinder, and rises over the water at A in steam, ready for another discharge and so on alternately. D is the top of the cylinder made to screw on and off, as occasion may require; F is the rod and handle of the piston.

If the patient is not able to work the Inhaler, any person may do it for him.

I am very respectfully,

Yours, &c.

JOSHUA HUMPHREYS.

DR. T. C. JAMES.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

On the first use of Ergot to promote Parturition.

It would appear that the *Secale cornutum* or Ergot of Rye, which has been of latter years introduced into obstetric practice by Drs. Stearns and Prescott, was *empirically* employed in France, half a century ago, for the purpose of accelerating lingering labours as will be seen from the following,

Extract of a Letter from M. Parmentier to the Abbé Rozier, from *Journal de Physique*, &c. Volume 4, page 144 for the year 1774.

Voici ce que Madame Dupille, dont la principale occupation semble être le soulagement des malheureux; voici, dis-je, ce qu'elle a eu la bonté de m'écrire concernant l'Ergot.

“J’ai lu, Monsieur, dans le dernier *Mercure* de Juin 1774, un extrait de vos Ouvrages, touchant le seigle ergoté. Il y a quelques années que j’entendis parler du danger de ce grain et des maladies affreuses, qu’on prétendoit qu’il avoit causées en Alsace autant que je puis m’en souvenir, ou dans les environs; ce qui me surprit infiniment; car depuis mon Enfance je lui connois une propriété dont je n’ai jamais oui mauvais effets, non plus que ma mere, qui en a fait prendre aux femmes qui ont de la peine à accoucher: je ne sais de qui elle tient cette Recette; elle n’a non plus que moi autre Science en Médecine que l’envie de rendre service aux personnes qui manquent de secours et qui en ont besoin.

“Voici comme elle le fait prendre, et comme j’en ai donné plusieurs fois à différentes femmes, et entr’autres, à la Fermiere Bertichere, près Chaumont Vexin, lieu que j’habite: elle s’en est bien trouvée, a eu un enfant depuis, et va incessamment en avoir un.

“Je pile ce grain (que nous nommons communément *faux seigle*) le plus que je peux; j’en prends ensuite le plein d’un dez à coudre, que je fais avaler dans une cuillerée d’eau ou de vin ou de bouillon, selon que je trouve sous la main.

La Femme qui en a pris, doit accoucher dans le quart-d’heure. Je n’en donne, d’après ce que m’a recommandé ma mere, que lorsqu’on est sûr que l’enfant se présente bien et que le Travail est trop lent; jamais les femmes, qui en ont pris, n’ont été malades après; et certainement elles sont plus susceptibles alors de mauvaises impressions que d’autres.

“Votre Dissertation m’a fort rassurée sur les effets de ce grain, que je craignois de faire prendre d’après tout-ceque j’en avois entendu dire, et me rend la satisfaction de pouvoir délivrer en un quart-d’heure, de ses Souffrances une femme fatiguée d’un travail long et pénible; car ma mere m’a assurée, et j’ai vu effectivement, qu’elles accouchoient dans le quart d’heure.”

TRANSLATION.

Madame Dupille, who is chiefly employed in relieving the afflicted, has sent me the following account concerning the Ergot.

Sir, I have read, in the last *Mercure* of June 1774, an extract from your works, respecting the Ergot.

Several years ago I heard of the dangerous quality of this grain, and of the severe diseases it was said to have produced, either in Alsace, or in its neighbourhood. This was to me a matter of surprise—for, from my infancy I have known it to possess one quality, which has not been followed by any bad consequences. My mother, who has given it to women in difficult labours, has the same experience. I know not where she procured the recipe. Like myself, she has no other medical skill, but a desire to be serviceable to those who want assistance. The following is her method of administering it, and is the same which has been used by me in several cases, and particularly to the wife of a farmer at Bertichere, near Chaumont Vexin, my place of residence. This woman was benefited by it, has had one child since, and is again about being confined.

I give a thimble full of the grain, which we commonly call, *false wheat*, very finely powdered, in a table spoonful of water, wine or weak broth. We look for its effects in a quarter of an hour: according to my mother's recommendation I give it only when the presentation is natural and the labour lingering. The women who have used it, have always enjoyed good health, and we know, that at such times they are more susceptible of disease.

Your dissertation has given me great confidence in the effects of this remedy, which I was doubtful about administering, after what had been said; and I have the satisfaction of being able, in a quarter of an hour, to procure the delivery of a woman, worn out with a lingering and painful labour; for my mother assures me, and I find it to be so, that the delivery is effected in a quarter of an hour.

The following observations are inserted here, having come to hand too late for any other place.

Some Observations on the Varioloid Disease, which has lately prevailed in Edinburgh, and on the identity of Chicken pox and Modified Small pox, in a letter addressed to Dr. Duncan, junior. BY JOHN THOMSON, M. D. F. R. S. E.

DEAR SIR, I beg leave to communicate to you the results of some observations which I have had occasion to make in attending to the progress of the eruptive varioloid disease that has lately prevailed in Edinburgh, and of the occurrence of which, in the Military Hospitals, my friend Mr. Hennen has given so accurate and interesting an account in the present number of your Journal.

My attention was first called in a particular manner to this disease, by the cases of it which occurred in the Depot Hospital, and by the cases in the Castle, produced by inoculation, with the matter taken from Mr. Hennen's son. Since that period I have seen in various parts of the town seventy two cases of this eruption, including those which have been detailed by Mr. Hennen. Of this number eight have had the disease after having passed through the small pox, twenty-seven after having had the cow pox, two have had the disease co-existent with cow pox, and thirty-five, including the six children who were inoculated in the Castle, had not passed through either small pox or cow pox. Three of the children affected with this disease after cow pox had previously passed through an eruption of the same sort, and in one of these, I have had the best opportunity to observe, that the disease has each time exhibited the appearances which have been supposed to be characteristic of chicken pox.

The greater part of those affected with this disease, who came first under my notice, had previously passed through either small pox or cow pox, or had had the disease communicated to them by inoculation. In watching the appearances and progress of the eruption in these persons, I was for a considerable time inclined to regard it as chicken pox, till having an opportunity of observing its severity and fatality in those who had not under-

gone small pox or cow pock, I was compelled to abandon that idea, and to believe, that in all the different forms under which this eruption has appeared, it could be no other than the small-pox.

This epidemic has attacked three different classes of persons, *1st*, Those who had passed through small pox; *2dly*, Those who had had cow pock; and *3dly*, Those who had had neither small pox nor cow pock, and in all of these it has appeared to possess some common characters. It has usually commenced in a vesicular form, or in a papular, speedily becoming vesicular, and has become pustular only in some cases in its progress. The pustules have appeared sometimes with, and sometimes without a central depression. The eruption has been irregular in size and form, as well as in the place of its first appearance, and in most instances it has appeared to occupy only the surface of the skin. It has in almost all instances come out in successive crops, some of which have appeared on the body after the eruption was at the height on the face. It has in general appeared, even in severe cases, to have arrived at the height on the face by the 6th day of the eruption, and in the milder not unfrequently by the 4th or 5th day. The fluid contained in the vesicles and pustules has in a great number of instances appeared to be lymph rather than pus, even to a late period of the disease, and has generally dried into horny scabs covering tubercular elevations of the skin, which in several instances, have been followed by pits or depressions of that texture. In the decline of the eruption, vesications upon an inflamed basis of a greater or less extent, have frequently appeared upon the extremities, generally filled with lymph, but in a few instances with air; and, in some instances, small abscesses have formed in the subcutaneous texture. This eruption has rarely had any of the smell peculiar to small-pox. It has produced but very little temporary blindness, and has seldom been accompanied by the symptoms of secondary fever.

In four of the eight patients who had had small pox, this epidemic has appeared in a highly aggravated and somewhat malignant form. Comparatively but few, I believe, have ever recovered of primary natural small pox who have had them in number and form similar to those described in Nos. 12, 13, and

14, of Mr. HENRIE'S cases. The disease in his fourth case, though severe, could not be said to be malignant, and in the other three instances it has been so mild, and of so short duration, that, had these cases occurred before the vaccine inoculation was known, no practitioner of experience would, I am convinced, have hesitated in pronouncing them to be distinct and unequivocal cases of chicken pox.

Of the twenty-nine patients who had undergone cow-pock inoculation, no one has died, and three only have had the disease in a very severe form. In by far the greater part of this class, the eruption has been papular or vesicular, without becoming distinctly pustular, and when it has become so, the pustules have appeared chiefly on the face, while the disease has remained vesicular on the rest of the body. In some of these cases the eruption has been at the height by the third, in others by the fourth, in most by the fifth, and in the severer by the sixth or seventh day. I have not been able to discover in the appearances, progress, or termination of the disease, as it has occurred in those who had been vaccinated, any symptoms by which I could distinguish it from the three varieties of chicken pox described by Dr. Willan, or from the numerous cases of that disease which I had seen before and since the practice of vaccination has been introduced.

Of the twenty-nine patients who have had this disease in the natural way, without having previously passed through cowpock or small pox, nine have died. In five of these fatal cases the disease was of the kind which has been so well described by Dr. Rogers of Cork, and by the late Dr. Walker of this place, under the name of malignant crystalline or water pox. In two of these, petechiæ or livid spots made their appearance before death; three died on the 6th, and two on the 8th day of the eruption. In the other four cases, the disease was pustular and confluent; one died on the 9th, two on the 12th, and one on the 18th day.

In thirteen of those twenty-nine cases, the disease, though it has not proved fatal, has been more or less severe. In several, particularly in adults, it had from the first the appearances which are usually described as characteristics of genuine small-pox, sometimes of the distinct, and at other times of the confluent

kind. In others, the disease had at first the appearance of aggravated chicken pox, rather than of small pox, the eruption coming out in successive crops, and being chiefly vesicular in its first stages, and becoming pustular only in its progress. In very few of the severer cases have there been any symptoms of secondary fever, and these have been mild and of short duration.

In the remaining seven cases the disease was remarkably mild, so much so as to resemble chicken pox, or the inoculated rather than the natural small pox. In these there was comparatively but very little eruptive fever, and in three or four instances the disease seemed to be at the height by the fourth or fifth day. Had not these cases occurred in situations where the malignant small pox existed, I should not have been disposed, from the appearances which manifested themselves, to believe that they could have originated from the infection of genuine small pox.

The history of the progress of this contagion in the military hospitals has been so fully and circumstantially related by Mr. Hennen, as to render it quite unnecessary for me to enter upon it. I shall only remark, that there seems no reason to doubt, that all the cases of mild and malignant small pox which have occurred in the Castle, were derived from matter taken from Mr. Hennen's son. He and his brother appeared to have caught the disease from Serjeant Williamson's son, and this boy again from the patient Wright in the Depot Hospital, who passed through a disease which was regarded as distinct and mild chicken pox. I may add, that, in one of Mr. Hennen's children, the disease was so mild as to escape almost unobserved; and in the other, from whom the matter was taken for inoculation, though the constitutional symptoms were at first severe, the eruption appeared to me to afford, in every step of its progress, one of the best marked cases of chicken pox which had ever come under my observation.

Though in other parts of the town it has been more difficult to trace accurately the progress of the contagion of this epidemic, yet in several situations, the mild and malignant form of the disease have appeared evidently to produce each other. This was particularly obvious in two situations where the disease pre-

vailed extensively, in the different floors of a tenement on the Castle Bank, and in those of another tenement on St. Leonard's Hill. From the fatality of the disease in these two situations among the children who had not been vaccinated, and its aggravated form even in some of those who had been vaccinated, no room was left for doubt that the disease was malignant small pox, though in both situations several children passed through it in a form so mild and so accurately resembling chicken pox as, in my opinion, not to be distinguishable from that disease. I have been informed of the mild form of the disease producing the malignant in unvaccinated persons in three other places of the town besides those I have mentioned, and that too in families in the better condition of life. I hope the different medical practitioners who have witnessed the occurrence of this important fact, will be induced to communicate to the public an account of the circumstances in which they respectively saw it occur.

It was my having seen the disease at first only in its mild form, and among those who had had small pox or cow pock, that induced me to believe, for a long time, that even the aggravated cases which presented themselves to my observation, could only be cases of chicken pox; and I was the more disposed to take this view of it, that I had formed a similar judgment with regard to an epidemical eruptive disease, which I saw prevailing extensively in the villages of Colinton, Slateford, and Currie, during the year 1809. The present epidemic appeared to me to resemble in every particular that which I then had occasion to see, and which, from a careful comparison of its symptoms in the milder cases, with Dr. Willan's description of chicken-pox, I had concluded to be that disease. I was the more confirmed in my belief of these epidemics being chicken pox, from my observing at both periods two symptoms occur in several patients which have been regarded by Dr. Willan and others as diagnostic of chicken-pox. I allude to the succession in the crops of the eruption, and the formation of vesications of greater or less extent, resembling those made by scalding water, occurring among, or in the interstices of the eruption, and producing the appearance which has been termed by some the *swine pox*, and which, in treating of the diseases of the skin, I have been

in the use of pointing out to my pupils as marks by which, in doubtful cases of small pox or chicken pox, they might determine the true nature of the disease. I mention this circumstance with a view to show the reluctance and difficulty which I have had in adopting the conclusions that have forced themselves upon my mind, and which I shall now briefly state to you.

1st, I have been convinced, by the varieties which have appeared in the form of this epidemic in the different individuals whom it has attacked, that the descriptions which have been given of the appearances and progress of the eruption in small pox by our best systematic authors, are, in many respects, imperfect; that the diagnostic marks which have been pointed out between small pox and the disease that has been termed chicken pox, are not to be relied upon; and that no applicable marks of distinction between modified small pox and chicken pox have hitherto been established. My observation would lead me to believe, that the eruption which succeeds to cow pock, has more of a vesicular or varicelloid appearance in infants, than it has in adults, while, in these again, it shows a disposition to become pustular, and exhibits more of the characters of small pox.

2dly, It appears from the records of medicine, that the same person may have small pox twice, (if not oftener,) during life; and the number of cases of this which have lately occurred in so short a time in Edinburgh, and in so limited a number of patients, seems to me to warrant the conclusion, that this must have been a much more common event than has usually been imagined. It is an event which, I conceive, must have occurred frequently, though its occurrence is denied by some, and comparatively but few instances of it are recorded, even by those who believe in its possibility.

3dly, It has been, I conceive, incontrovertibly established by Dr. Jenner and his followers, that cow pock has the property of rendering those who have passed through it, much less susceptible of small pox infection than they were before; and, besides this, that it possesses also the invaluable property of modifying the small pox in those who receive them, and of converting them, from the most fatal of all diseases, to one scarcely, if at all fatal. A sufficient number of observations have not yet been collected to prove satisfactorily, that this last property is

possessed in an equal degree by the small pox, though it seems probable from some, but not all of those cases of secondary small pox which have been recorded, as well as from the result of some of the cases of this kind which have occurred in Edinburgh, that small pox also possess a similar property.

4thly, By admitting that small-pox possess this modifying property, it will follow, that, in the instances in which they exerted this influence previously to the discovery of cow pock, they must have produced a mild and less fatal species of small pox, but a species which has not been recognized or pointed out as differing from primary natural small pox by any author with whose writings I am acquainted. It seems, therefore, probable, that this secondary small pox, which we have now so much reason to believe was of frequent occurrence, must have formed a considerable portion of the varioloid eruptions that were formerly denominated the spurious small pox, and afterwards by some the chicken pox. On the supposition that cow pock preserves from the infection of small pox in an equal degree with small pox themselves (and I am not aware of any facts which tend to prove the contrary,) it will follow that the twenty-seven individuals whom I have mentioned as having had the varioloid disease after cow pock, would, if they had had small pox instead of cow pock, have become affected with small pox a second time, on being exposed to the contagion of this disease, and that too in a form which, previously to the discovery of the cow pock, must have appeared to practitioners as spurious small pox or chicken pox. In this case it is evident that thirty-five of sixty-four of the patients who took the varioloid disease in a natural way, would have passed twice through small pox.

5thly, After Dr. Heberden had distinguished chicken pox from small pox, and had convinced himself and the medical world, that these diseases arise from two contagious poisons, specifically distinct from each other, it seems probable, that the cases of modified secondary small pox which may have occurred, must have been described as cases of chicken pox, since we no where find any hint of the possible co-existence of these two diseases, or of the danger in which medical practitioners are of confounding them together; and also, since we find authors of so great authority as Dr. *Monro Primus*, and

Dr. Heberden, affirming that small pox after small pox is an event of rare occurrence. The former says, "My correspondents almost all agree with me in affirming, that they never saw any attacked by true small pox after they had the true kind, whether communicated by art or by nature;" and the latter, "It would be no extravagant assertion to say, that here, in England, not above one in ten thousand patients is pretended to have had it twice, and whenever it is pretended, it will always be as likely that the persons about the patient were mistaken, and supposed that to be the small pox, which was an eruption of a different nature, as that there was such an extraordinary exception to what we are sure is so general a law."

It therefore appears to me, 6thly, That it now remains to be investigated, in what proportion of the cases, which have been denominated chicken pox, it is probable the disease has been secondary modified small pox; and, upon the supposition of these being two distinct diseases, by what marks we are in future to distinguish them from each other. I can only repeat, that, in a great proportion of the cases of small pox which have occurred to my observation after small pox, as well as in those cases that had been modified by previous cow pock inoculation, I have not been able to distinguish them from chicken pox, but have found every symptom in them to correspond most accurately with the descriptions of the varieties of chicken pox, which have been given by Heberden, Willan, Bateman and others. I am, therefore, satisfied, that previously to the discovery of the cow pock, secondary small pox being a disease frequent in its occurrence, must have stood in nearly the same relation to primary small pox, that modified small pox now stand in to cow pock; and my present impression is, that it may be, that chicken pox and modified small pox are one and the same disease.

I am not aware of any accurate or extensive series of observations which contradict this hypothesis, nor do I think it can well be set aside, till it shall be proved that chicken pox occur generally in persons who have not passed through cow pock or small pox, and prevail epidemically without cases of small pox appearing among them; but of this I find no unequivocal example in the past records of medicine. There are upon re-

cord, it is true, many cases in which the spurious or chicken pox are said to have preceded small pox, and others in which the chicken pox are said to have intervened between the cow pock and the modified small pox. Before, however, admitting that in the production of these cases, there operated two poisons specifically different, it will be necessary to be assured, that the appearances exhibited by chicken pox cannot be produced by the contagion of primary small pox, and *vice versa*, as well as, that the contagion of small pox cannot produce an eruptive disease twice in those who have undergone cow pock inoculation.

It will be necessary also to ascertain, whether those who have passed through small pox in its milder form, are equally secure against a second attack of small pox, as those who have passed through the disease in its more regular and severe form. For if it shall be found that those who have passed through the mild sorts of small pox are less secure against a second attack, than those who have passed through the severe, it will then be rendered probable, that many of the cases which have been considered as cases of chicken pox, preceding small pox, were in fact only cases of mild small pox, similar to some of those which have been produced by the present epidemic, in individuals who had neither passed through cow pock nor small pox, and which exhibited in their appearance the characters that Dr. Heberden has assigned to chicken pox.

Can it be that the hypothesis of the contagion of chicken pox being specifically different from that of small pox, has been had recourse to, in order to explain those cases of secondary small pox which may have occurred after variolous inoculation, and in the benevolent wish of vindicating that practice from the aspersion of its being inefficacious?

7thly, It seems to me certain, that the epidemical disease which has of late prevailed in Edinburgh, is the same with those varioloid diseases which, since the introduction of cow pock inoculation, have been observed in many places of this and other countries, and which have been by some medical practitioners regarded as small pox, and by others as chicken pox. Of this kind, I conceive, was the disease which Mr. Brown of Musselburgh has described, as occurring in forty eight individuals after cow pock inoculation. This author has omitted to mention the period at which the eruption was at the height in ten of his

patients, but in the remaining thirty eight, it deserves to be remarked, that the eruption was in five of them at the height by the 3d day; in two by the 4th; in twelve by the 5th; in seven by the 6th; in nine by the 7th; and in three by the 8th day; and that no instance is recorded of death having occurred in any of these patients. Through Mr. Brown's statement was made for the purpose of throwing discredit upon the efficacy of cow pock inoculation, the salutary powers of that practice in modifying small pox, seem to me to be established by his cases, beyond all possibility of doubt or cavil. I can have no doubt also, that this is the disease, concerning which the medical practitioners of Forfarshire published a short Report in 1813, and of which Dr. Adams has given a more minute detail in his Inaugural Thesis, printed here in 1814. This gentlemen mentions, in p. 42, that this disease, which the medical men of Forfarshire have concurred in denominating small pox, had occurred in five or six individuals, who had formerly passed through that disease. The efficacy of the cow pock in modifying the small pox, is proved by the testimony of the medical practitioners, as to the mildness of the disease in those who had been vaccinated; and also by the fact, that no patient who appeared to have been properly vaccinated, died of it. The very interesting account given by Dr. Dewar, of the eruptive disease which has appeared lately in Fife, contains many proofs, that the disease which he describes is the same with that which at present exists in Edinburgh. Of seventy cases attacked with this eruption, fifty four had been vaccinated, and of these, one child who had been long in bad health, died. Of sixteen who had not been vaccinated, four died, a proportion wonderfully near, though somewhat less than that of the mortality which has occurred in Edinburgh.

Lastly, It seems to me, that the hypothesis which I have thrown out, if it shall be confirmed by future experience, will afford a satisfactory explanation of the nature of those varioloid diseases which have of late years been observed to succeed to the practice of cow pock inoculation, and will, at the same time, reconcile the various and discordant opinions which have been entertained by medical practitioners, respecting these diseases.

I shall only add, that I feel no anxiety about the fate of this

hypothesis, any farther than that it may tend to promote investigation, in the important subject to which it relates, and to defend the most valuable of all modern discoveries, in the only point in which it can now be supposed to be vulnerable.

A friend, in whose judgment and experience I place the greatest confidence, has been pleased to express himself to me in the following terms: "The opinion suggested by you, that these diseases may all owe their origin to one and the same contagion, if true, would close up much debateable ground—connect and explain many anomalies—simplify our future inquiries—and place beyond any doubt the supremacy of vaccination, as a prophylactic of regular small pox. Although the opinion suggested does still appear to me very doubtful, I think you will do quite right to publish your observations at once, and in the way you proposed. This will re-agitate a most important pathological question, and elicit from others, interesting information on many yet doubtful points in the history of those diseases. Though doubtful, however, I am far from thinking your opinion fanciful or unfounded; on the contrary, I could furnish some hints rather favourable to its probability."

Before concluding these observations, permit me to avail myself of this opportunity, to return my best thanks to my friends, Drs. Maclagan, Moncrieff, Tweedie, and Bartlett, and to Messrs. Johnston, Shetky, White, and Thomson, for the opportunities which they have afforded me of seeing the patients affected with this disease under their care; and permit me at the same time to say, that I should feel myself particularly obliged to any of your readers who take an interest in this subject, by their communicating, through the medium of your Journal, or by letter, addressed directly to myself, any facts which may have occurred in their practice, tending either to confirm or to refute the hypothesis, *that small pox, chicken pox, and modified small pox, all proceed from one and the same contagion*. I remain, dear Sir, yours, &c.

5, George Street,
15th September, 1818. }

JOHN THOMSON, M. D.

Additional Observations on Varioloid Diseases. By JOHN THOMSON, M. D. &c. &c.

[From the Edinburgh Medical and Surgical Journal, No. 57.]

DEAR SIR,—Since sending you the “Observations on the Varioloid Disease, &c.” I have had occasion to see twelve additional cases of it in Edinburgh. In two of these the disease has occurred in persons who had previously passed through small pox. It has attacked, for the second time, a boy who had been inoculated with cow pox; and it has proved fatal in two instances in which the patients had not passed through small pox or cow pock inoculation.

Having been informed by my friend Mr. William Wood that a varioloid disease, similar to that which had occurred in Edinburgh, was prevailing in the town of Lanark, and at Mr. Owen’s cotton mills in that neighbourhood, I visited that place, and found that the disease had prevailed very extensively in the town, but was then beginning to decline. Five instances were mentioned to me by the medical practitioners in which it had proved fatal, but I could not hear of any deaths having taken place among those who had previously undergone vaccination.

At Mr. Owen’s mills, through the obliging attention of Mr. Gibson, who has the medical charge there, I had an opportunity of seeing 118 cases of young persons affected with this epidemic. In its general appearances the disease bore a very striking resemblance to that which I have had occasion to see in Edinburgh, though on the whole it appeared to me to have a character considerably milder. Four only of those affected with it had previously passed through small pox; in two of these the disease was mild, but in the other two severe. Eighty two had this disease after having passed through the cow pock. In a few of these it might be said to be severe, but in by far the greater number it was extremely mild, and exhibited the most convincing and agreeable proofs of the efficacy of cow pock in modifying small pox. Thirty-two had the disease without having passed through either cow pock or small pox, and what appeared to me remarkable, it had proved fatal only in

one person of this class. Several, however, had been in imminent danger, and their recoveries may be tedious. Five or six in this class, as well as a considerable number of those who had previously passed through cow pock, had the disease in a form so slight as to agree with the descriptions which have been given of chicken pox rather than small pox. Several individuals had experienced a severe variolous fever without any eruption having appeared, while others had the eruption with little or no fever. The eruption itself varied in quantity from one pustule to a number that was in some instances unaccountable. By a letter which I received last evening from Mr. Gibson, I learn that the disease is still on the increase. One more instance has occurred of its having attacked a boy who had previously passed through small pox, and one where it has attacked, for the second time, a lad who had previously passed through the cow pock. In some of those who have neither undergone cow pock nor small pox, the disease continues, Mr. Gibson informs me, to exhibit the symptoms which have been regarded as characteristic of chicken pox. But I forbear entering more minutely into details, as I am not without hopes that that gentleman may himself be induced, to lay before the public, an account of this epidemic as it has presented itself to his observation.

I have been led to believe, that it might be useful to circulate, among medical practitioners, the following queries; definite answers to which could not fail, I conceive, to remove much of that disagreeable uncertainty which exists at present, with regard to the several points to which these queries relate. They have not, as to some on a first perusal might appear, been hastily drawn up, but are, as well as the conclusions contained in my former letter to you, on which they are founded, the result of much observation, reading, and reflection. I have only to repeat, that I shall be obliged to such of your readers as have had occasion to attend in a particular manner to varioloid diseases, by their communicating to me, through the medium of your valuable journal, or otherwise, any information which may tend to throw light on the different subjects of these queries. I may remark, that in tracing the history of chicken pox, it is particularly desirable that it should be accurately as-

certained in what situations and seasons it has appeared only as a sporadic, and in what as an epidemical disorder.

Query 1st, Have you ever had occasion to see Chicken pox prevailing epidemically, without cases of Small pox occurring among them?

2d, Have Chicken pox appeared to you to attack those who have not had either Small pox or Cow pock as frequently as those who had passed through these diseases; and have you remarked any difference in the appearance of the eruption in these three several classes of patients?

3d, Have any examples occurred in your neighbourhood of persons having had the Small pox twice? and did it appear, in those instances, that the disease was less severe in its second than in its first attack?

4th, Has a Varioloid disease occurred to your observation in persons who had passed through regular Cow pock inoculation; and in the instances in which it may have occurred, whether has this disease appeared to you to resemble more Chicken pox or Small pox?

5th, Has this Varioloid disease, when it has attacked those who had been vaccinated, proved in any instance fatal?

6th, What were the usual symptoms of this disease in those who had not passed through Small pox or Cow pock? Were they those of Small pox, or of the disease which has been termed Chicken pox?

7th, In what proportion of persons attacked with this disease, who had not been vaccinated or variolated, has it proved fatal?

8th, Have you had occasion to see any instances of modified Small pox, or the disease which has been termed the Chicken pox, occurring oftener than once in the same individual?

9th Does the general description which I have given of the Varioloid disease, in the three different classes of persons whom it has attacked in Edinburgh, agree with that of your observation; or in what respect does your observation differ from mine?

10th, Are you acquainted with any facts which tend to disprove the hypothesis that Small pox, Chicken pox, and Modi-

fied Small pox, may all arise from one and the same contagion?

I remain, dear Sir, yours truly,

JOHN THOMSON, M. D.

5, *George Street*, 15th October, 1818.

P. S.—Since sending you the above letter, I have received, among several valuable communications on the subject of Varioloid Diseases, one from Dr. Mudie of St. Andrews, containing a particular account of an eruptive disease which prevailed at that place in the end of the year 1817, and beginning of 1818, resembling in every respect, that which has lately occurred in Edinburgh; and accompanied by a document, proving incontestably, that the idea of variola and varicella, arising from the same contagion, had been forced upon Dr. Mudie by observation, and distinctly expressed by him in a letter to Dr. Macfarlane of Perth, dated 15th April, 1818.

J. T.

5, *George Street*, 17th October 1818.

Observations on Tetanus, Medical and Surgical. Communicated to the *Société Médicale d'Emulation*, at Paris, by Dr. LOUIS FRANCK, Privy-Counsellor and first Physician to her Highness the Dutchess of Parma.

[From the London Medical and Physical Journal, for September, 1818.]

THE disappointment experienced by anatomists in their inquiries into the origin of this disease, after having been long expressed in useless regret, has at length excited a degree of ardour for the investigation that promises to lead to the most important results. Dr. John Franck first called the attention of physicians to the spinal marrow, in a memorial on this subject, published in 1791; and his views have been adopted, and the truth of his observations generally acknowledged, throughout Europe. Professor Rachette, a short time since, published

an interesting Treatise on Diseases of the Spinal Marrow; and Dr. Copeland produced, in 1815, a very important work on the same subject. Dr. Franck relates two cases that have lately occurred to the observation of Professor Brera of Padua. The first occurred in a woman, aged twenty-two; it appeared to arise without any evident cause: all the usual remedies were tried without success; she died on the 15th day. On dissection, a considerable quantity of pus was found in the cavity of the abdomen, the consequence of general peritoneal inflammation; the spinal marrow was soft and considerably altered in structure; there was effusion of serum between its coats, and the vessels were much distended with blood.

The subject of the second case was a young man, aged nineteen, who had received a contusion on the thumb of the right hand: twelve days after, he began to feel a stiffness in the motions of the lower jaw, which gradually increased; and, in a few days, he was seized with tetanus. When brought to the hospital, he was covered with a cold sweat, and complained of pain over the whole body, particularly about the lumbar region and along the spinal canal; the face was red and flushed, and the pulse small and contracted. Professor Brera directed a hundred and twenty leeches to be applied along the course of the spine, and prussic acid to be exhibited internally. After the leeches had been applied, relaxation of the muscles came on; but this was succeeded by paralysis, and he soon afterwards expired.

The examination of the body after death was highly interesting: there had been violent inflammation of the spinal marrow, commencing at the situation of the lower cervical vertebræ, and continued to the extremity. But, what was very remarkable, the inflammation was confined to the right side of the spinal marrow, corresponding in this respect with the hand injured.

M. ESQUIROL's *Observations at the Salpêtrière.*

[From the London Medical and Physical Journal, for December, 1818.]

M. ESQUIROL, a short time since, read a Memoir to the Medical Society of Paris, containing the result of his observations at the *Salpêtrière*, during the years 1811, 1812, 1813, and 1814.

The number of insane persons admitted into that hospital during this period was 1,119; ninety-two of whom became insane after child-birth, during lactation, or at the time of ceasing to give suck.

Insanity manifested itself from the first to the fourth day subsequent to delivery, in 16 women;

From the fifth to the fifteenth, in 21;

From the sixteenth to the sixtieth, in 17;

From the sixty-first to within a year, in 19;

Immediately after ceasing to give suck, either voluntarily or forced, in 19.

The development of the malady is consequently more to be feared in women recently delivered, than in those who have given suck for some time; and it becomes more rare as this period is extended.

Of these 92 insane persons, 8 were in a state of folly, 35 in that of melancholy, and 49 were maniacs;—22 were from 20 to 25 years of age; 41 from 25 to 30; 16 from 30 to 35; 12 from 35 to 40; 2 were above 40 years old;—63 were married, 29 unmarried women.—14 became deranged from the action of physical causes, (almost all of them from the impression of cold;) the remaining 78, from moral causes.

Of 55 who recovered, 4 did so during the first month; 7, during the second; 6, during the third; 7, during the fourth; 5, during the fifth; 9, during the sixth; 15, from the sixth to within two years; and 2, after two years.

Of the 37 who were not cured, only six died. Examination of the body after death did not afford any information respecting the cause of the disease.

A singular pathological phenomenon has been noticed by M. Esquirol, in the bodies of many lunatics, after death—the displacement of the transverse portion of the colon; on which he makes the following observations:—

"The ancients and the moderns who have treated of mental alienation, and particularly of melancholy, have all spoken of lesions of the abdominal viscera; but no author has mentioned a displacement of the transverse portion of the colon. A displacement of this intestine may, however, be frequently observed in the bodies of insane persons. Sometimes, the direction of it is oblique; at others, perpendicular, so that its left extremity is situated behind the os pubis.

"This displacement cannot be attributed to mechanic action, dependant on thickening of the coats of the intestine, or a collection of fæces in its cavity; for, in the greater number of subjects that I have examined, the colon was empty, and in all it was in a healthy state as to structure. The same was the case with the ascending and descending portions of it, which, by their relative situation, could draw it from its natural direction. This displacement is not the effect of the last disorder under which the patients die; because this circumstance has been observed in those lunatics who have died of different diseases.

"The insane persons, particularly melancholics, in whom this displacement was observed, frequently complained of pains in the epigastric region, which they described as feeling as though a cord were tied round the body about the hypochondria, and the stools were generally in a bad state. May not these symptoms be explained by the displacement of the colon?

"Have not the ancients, in administering hellebore; and the moderns, in prescribing emetics and drasticks, in the treatment of mental alienation, particularly in melancholy; aimed at restoring the healthy state of the abdominal viscera? But, may not purgatives be considered injurious, since they increase debility of those parts? and, thus, have they not taken care to join them with tonics? Lastly, do not sea-voyages, and horse-exercise, so beneficial in melancholy, act by strengthening the abdominal viscera particularly.

"The knowledge of these facts has appeared interesting to me,—1st, because this displacement is frequent in insane persons, particularly in melancholics; 2dly, because an acquaintance with this fact may lead to a more decided and rational mode of treatment in that malady."

UNIVERSITY OF PENNSYLVANIA.

At a public Commencement for conferring Medical Degrees, held at the University of Pennsylvania, April 15th, 1819, the Degree of Doctor of Medicine was conferred upon the following gentlemen, who produced Theses on the following subjects:

CANADA.

George La Rue,

Methodes d'ouvrir les bubons syphilitiques.

CONNECTICUT.

George McClellan,
Alfred L. Munson,Surgical Anatomy of Arteries.
Native Asclepias.

NEW JERSEY.

Frederick Richmond,
Theophilus E. Beezley,
Samuel M. Fisler,
Joseph H. Cook,
William H. McCalla,Phthisis pulmonalis.
Emetics.
Amenorrhœa.
Hæmoptysis.
External application of Cold Water.

PENNSYLVANIA.

John Trenor,
J. P. Freeman,
Abraham Stout,
John G. Marshall,
William Rankin,
Chandler Redfield,
Stephen Harris,
J. Russel Smith,
James P. Price,
William Darrach,
Jesse R. Burden,
Benjamin R. McConnel,Theory of Secretion.
Influence of the Spinal Marrow.
Utility of Vinegar.
Hæmoptysis.
Effects of Mercury in Erysipelas.
History of Medicine.
Croup.
Blood-letting.
Catamenia.
Epidemic at Alms House, 1817.
Chimaphila Umbellata.
Observations on the Materia Medica.Frisby H. Snow,
Chs. N. McCoskry,
Thomas H. Connell,
John S. Irwin,
Robert Alison,
Obadiah M. Dingee,
G. F. Klinge,
Jesse Coates,
William M. Sharp,Podophyllum Peltatum.
Calomel in Chronic Rheumatism.
Ophthalmia.
Hysteritis.
Hypopyon.
Hydrocele.
Light as a medical agent.
Hydrocele.
Blood-letting.

DELAWARE.

John G. Maxwell,
Samuel Sorden,
William D. Brinckle,Laurus Sassafras.
Vomiting.
Herpes.

MARYLAND.

John R. Purnell,
Chesed Purnell,
William H. Thomas,

Emetics.
Diarrhœa.
Cynanche Trachealis.

DISTRICT OF COLUMBIA.

Elijah R. Craven,
Warwick P. Miller,

Suspension of the actions of Life.
Suspended Animation.

VIRGINIA.

J. K. Mitchell,
William Moseley,
John Minge,
James W. F. Macrae,
James Wheatley,
Charles U. quhart,
William Gwathmey,
Edwin L. Degraffenreid,
Edward Curd,
William L. Powall,
Edward M. Ford,
William Davis,
Mortimer Williams,

Archibald Baldwyn,
H. L. Davis,
James P. Hill,
Alfred Murray,
James Weeks,
William A. Sykes,
James W. M. Wallace,
Thomas P. Rives,
Robert E. Bouldin,
Littleberry N. Ligon,
William R. Poindexter,
Hugh G. Seymour,
Robert W. Carter,
Augustus H. Garnet,
Richard A. Christian,
Edward Willcox,
Dick H. Egglestone,
William P. Fontaine,

Stirling Ford,

John D. Spragins,
John T. Ligon,
William F. Gooch,
John H. Patterson,
Mordecai C. Booth,

[tion.
Proximate cause of febrile re-ac-
Menstruation.
Neuralgia.
Uterine Hæmorrhage.
Emetics.
Anasarca.
Cholera Infantum.
On the influence of the Passions.
Uterine Hæmorrhage.
Ascites.
Obstipatio.
Cynanche Trachealis.
Objections to the sympathetic
doctrines of Conception.
Cynanche Trachealis.
Gastritis.
Dysentery.
Gout.
Cholera Infantum.
Remitting Inflammatory Fever.
Hydrothorax.
Anasarca.
Amienorrhœa.
Croup.
Typhus Fever.
Hydrocephalus acutus.
Croup.
Tetanus. [mach.
Chronic Inflammation of the Sto-
Marasmus.
Hectic Fever.
Inflammatory Dysentery of our
Climate.
Treatment of Fracture of Extre-
mities.
Calomel.
Epilepsy.
Trachitis.
Peritonitis.
Balsam Copaivi.

NORTH CAROLINA.

Robert Hinton,	Concussion of the Brain.
John C. Smith,	Dysentery.
John Gatling,	Asthma.
Henry L. Plummer,	Dysentery.

SOUTH CAROLINA.

John W. Simpson,	Cholera Infantum.
S. N. Hamilton,	Medical use of Phosphorus.
S. H. Dickson,	Yellow Fever of Charleston, 1817.
St. John Philips,	Oleum Terebinthinæ.
Henry Boylston,	Button Snake root.
Edmund Ravenel,	Dropsy.
Hugh L. Alison,	Regular Gout.
William L. Moultrie,	Best means of promoting Suppuration.

GEORGIA.

Walter H. Weems,	Baptisia Tinctoria.
Abednego Wright,	Puerperal Fever.
Richard H. Randolph,	Bilious Remittent of Georgia, 1817.
G. B. L. Bush,	Asclepias Syriaca.
David Holt,	Nourishment of Fœtus.

KENTUCKY.

Charles H. Warfield,	Hepatitis.
John P. Harrison,	Analogies of Plants and Animals.
Samuel M. Puckett,	Conception.
Harvey Bradford,	Sympathy.
Benjamin T. Bedinger,	Bilious Remittent of Kentucky, 1818.
David J. Ayres,	Sulphur.

TENNESSEE.

William R. Rucker,	Hepatitis.
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OHIO.

Cyrus W. Trimble,	Hydrocephalus Internus.
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LOUISIANA.

James J. Cosby,	Medical Topography of Louisiana.
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MISSOURI TERRITORY.

Hardage Lane,	Tobacco injections in Colica Pictonum.
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IRELAND.

John Cullen,	Inflamed and indolent Ulcers.
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Interments in the Town of Portsmouth, New-Hampshire, during the Year 1818.

<i>Deaths in each Month.</i>				<i>Total.</i>	AGES.			
January,	.	.	.	11	Under 1	Year		21
February,	.	.	.	9	From 1	to 5		5
March,	.	.	.	8	5	to 10		8
April,	.	.	.	11	10	to 20		9
May	.	.	.	11	20	to 30		17
June,	.	.	.	3	30	to 40		15
July,	.	.	.	14	40	to 50		12
August,	.	.	.	7	50	to 60		5
September,	.	.	.	12	60	to 70		8
October,	.	.	.	11	70	to 80		8
November,	.	.	.	12	80	to 90		8
December,	.	.	.	9	90	to 100		2
Total,				118	Total, 118			

Of whom there were, Males 56—Females, 62.

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Abscess, . . .	.	.	.	1	Hæmorrhage, . . .	.	.	.	1
Apoplexy, . . .	.	.	.	3	Herpes, . . .	.	.	.	1
Atrophy, . . .	.	.	.	7	Hysteritis, . . .	.	.	.	1
Cholera, . . .	.	.	.	3	Intemperance, . . .	.	.	.	1
Cancer, . . .	.	.	.	1	Inflammation of the Bowels,				1
Consumption, . . .	.	.	.	22	———— Liver,				1
Croup, . . .	.	.	.	2	Pneumonia Typhoides, .				4
Dropsy, . . .	.	.	.	3	Scrophula, . . .	.	.	.	3
———— of the Brain,	.	.	.	5	Scirrhus of the Liver, .				2
Diarrhœa, . . .	.	.	.	1	Sudden, . . .	.	.	.	3
Erythema, . . .	.	.	.	1	Old Age, . . .	.	.	.	11
Fever, Typhus . . .	.	.	.	21	Unknown Diseases, .				6
———— Pulmonic, . . .	.	.	.	4	Casualties, Burnt, .				2
———— Puerperal, . . .	.	.	.	1	———— Drowned, .				4
———— Inflammatory, .	.	.	.	1					
Gangrene, . . .	.	.	.	1	Total,				118

BIRTHS.

Males 124—Females 113—Still Born 7—Total 244.

*Abstract of the Bill of Mortality for the town of Salem, (Mass.)
from the 1st of January, 1818, to the 31st of December in-
clusive, 1818.*

<i>Deaths in each Month.</i>				<i>Total.</i>	AGES.				
					Under	1	Year		
January,	-	-	-	13	From	1	to	2	31
February,	-	-	-	15		2	to	5	14
March,	-	-	-	19		5	to	10	11
April,	-	-	-	14		10	to	20	8
May,	-	-	-	13		20	to	30	13
June,	-	-	-	17		30	to	40	21
July,	-	-	-	19		40	to	50	27
August,	-	-	-	19		50	to	60	14
September,	-	-	-	20		60	to	70	14
October,	-	-	-	21		70	to	80	23
November,	-	-	-	13		80	to	90	12
December,	-	-	-	11		90	to	100	5
									1
Total,				194	Total,				194

Abstract of the Bill of Mortality for the town of Boston, from the 31st of December, 1817, to 1818, agreeably to the Record kept at the Health Office.

286

1818.

	Un. 1 yr. & fr.		1 to 2		2 to 5		5 to 10		10 to 20		20 to 30		30 to 40		40 to 50		50 to 60		60 to 70		70 to 80		80 to 90		90 to 100		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January,	4	4	2	2	2	1	0	0	0	0	3	3	5	4	5	6	9	4	2	1	3	4	1	3	0	1	71
February,	6	8	3	4	3	1	0	0	0	3	3	3	3	3	6	4	1	2	3	2	1	2	0	0	0	1	60
March,	15	14	5	6	2	2	0	0	3	2	4	4	4	3	6	5	4	2	2	2	1	0	1	0	0	0	91
April,	8	10	2	4	3	2	0	0	1	1	0	1	7	7	7	5	3	4	4	4	4	1	0	0	1	0	79
May,	6	5	3	2	4	0	4	2	1	4	8	3	3	7	3	1	5	1	2	4	3	4	2	1	0	0	78
June,	5	6	4	6	2	1	3	2	1	2	5	4	5	6	6	4	5	5	4	1	2	2	0	2	0	0	83
July,	7	5	3	4	2	0	0	2	4	3	5	3	4	5	4	5	2	2	2	3	2	3	1	0	1	0	75
August,	8	9	2	2	5	2	1	1	5	0	7	4	4	6	6	3	3	2	2	2	1	1	0	1	0	0	77
September,	6	7	9	7	3	4	2	2	3	1	4	5	6	4	3	2	5	4	3	4	3	1	0	0	0	0	88
October,	8	8	5	4	4	2	2	3	2	1	6	10	8	4	5	4	4	4	6	5	3	3	2	0	0	0	104
November,	3	4	8	5	2	3	3	1	3	3	7	7	5	2	4	5	4	4	3	4	1	3	2	3	0	0	89
December,	7	9	3	3	3	3	1	5	3	0	6	5	3	5	5	3	2	2	3	3	1	0	0	1	0	0	76
Total,	83	89	49	49	35	22	18	18	26	17	58	52	57	56	60	49	51	38	36	35	25	24	9	11	2	2	971

The above Deaths were caused by Diseases and Casualties as follows, viz.

Abcess	5	Cramp,	1	Dysentery,	4	Fits	24	Intemperance,	2	Scrophula	2
Accidental,	1	Croup,	5	Dysury,	1	Gout,	1	Measles,	1	Spasms,	4
Aneurism	1	Cynanchemaligna	1	Fe er, Bilious,	7	Gravel,	1	Mortification,	4	Sull Born,	46
Angina Pectoris	5	Debility,	2	Intermittent	1	Hepatitis,	5	Old Age,	32	Suicide,	4
Apoplexy	9	Dis. unknown,	246	Inflam.	5	Hernia,	1	Palsy,	6	Sudden,	12
Burns	2	Drink. cold water	2	Nervous,	2	Hæmorrhagia	4	Phrenitis,	1	Ulcers,	1
Cancer	3	Dropsy,	23	Pulmonic,	36	Hooping Cough,	2	Pleurisy,	3		
Casualty,	10	Dyspepsy,	12	Putrid,	1	Hydroceph. Int.	4	Quinsy	4		
Cholera,	3	Drunkenness,	1	Puerperal,	4	Infant. Diseases	156	Kickers,	2		
Consumption,	138	Drowned,	12	Typhus	112	Inflam. of Brain	1	Scalds,	3	Total,	971

Published by order of the Board of Health,

JAMES ROBINSON, Secretary.

Boston, Jan. 9, 1819.

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Abscess, - - -	13	Inflammation of the Bladder, -	3
Apoplexy, - - -	46	_____ Bowels, -	55
Asthma, - - -	6	_____ Brain, -	19
Burned or Scalded, - -	16	_____ Chest, -	89
Carbuncle, - - -	1	_____ Liver, -	29
Cancer, - - -	11	_____ Stomach, -	6
Caries, - - -	1	Insanity, - - -	13
Casualty, - - -	41	Intemperance, - - -	38
Catarrh, - - -	3	Killed, - - -	2
Child-bed, - - -	8	Locked Jaw, - - -	5
Chlorosis, - - -	1	Lumbar Abscess, - - -	1
Cholera Morbus, - - -	64	Manslaughter, - - -	1
Colic, - - -	4	Marasmus, - - -	14
Consumption, - - -	591	Measles, - - -	18
Convulsions, - - -	201	Menorrhagia, - - -	1
Contusion, - - -	3	Mortification, - - -	12
Cramp in the Stomach, -	9	Nervous Disease, - -	3
Diarrhœa, - - -	46	Old Age, - - -	92
Drinking Cold Water, -	16	Palsy, - - -	46
Dropsy, - - -	88	Peripneumony, - - -	39
_____ in the Chest, -	47	Pleurisy, - - -	27
_____ in the Head, -	106	Pneumonia Typhoides -	20
Drowned, - - -	52	Quinsy, - - -	4
Dysentery, - - -	141	Rheumatism, - - -	8
Dyspepsia, - - -	8	Rickets, - - -	1
Epilepsy, - - -	4	Rupture, - - -	1
Erysipelas, - - -	3	Scirrhus of the Liver, -	1
Fever, - - -	47	Scrofula, or King's Evil,	19
_____ Bilious, - - -	9	SMALL POX, - - -	19
_____ Hectic, - - -	3	Sore Throat, - - -	5
_____ Inflammatory, -	10	Spasms, - - -	8
_____ Intermittent, -	7	Spina Bifida, - - -	1
_____ Puerperal, - - -	3	Sprue, - - -	23
_____ Putrid, - - -	1	Still-born, - - -	159
_____ Remittent, - - -	7	Stone, - - -	1
_____ Typhus, - - -	263	Strangury, - - -	4
Flux, Infantile, - - -	68	Sudden Death, - - -	21
Fracture, - - -	1	Suicide, - - -	24
Gout, - - -	4	Syphilis, - - -	14
Gravel, - - -	6	Tabes Mesenterica, - -	111
Hæmorrhage, - - -	9	Teething, - - -	39
Hæmoptysis, - - -	8	Tumor, - - -	1
Herpes, - - -	1	Ulcer, - - -	7
Hives or Croup, - - -	74	Unknown, - - -	43
Hysteria, - - -	1	Whooping Cough, - -	123
Jaundice, - - -	10	Worms, - - -	28
Infanticide, - - -	5	Total, - - -	3265

REMARKS.

The City Inspector respectfully reports to the Board, a statement of the deaths in the City and County of New-York, for the year 1818, amounting to three thousand two hundred and sixty-five, being an increase of seven hundred and thirty-eight above that of the preceding year.

In consequence of the excessive heats that prevailed during the summer months of the past year, a greater number of deaths took place, during those months, than was usual in former years; this circumstance, combined with the increase of our population, to which may be added the constant influx of emigrants, many of whom being of the poorer class, and unaccustomed to our climate, may account for the number of children that died of distempers peculiar to our summer months, in an atmosphere unusually rarefied.

The returns of deaths received from Baltimore and Philadelphia, however, sufficiently prove, that the climate of New-York is as salubrious as that of her sister cities; to exemplify which we need only observe, that in the year 1817, the deaths in Baltimore, (with a population, perhaps *thirty thousand*) amounted to *thirteen hundred and twenty*, whilst in our city, containing a population at least *four times* greater, we had not more than twice that number.

The fortunate exemption of our city from the pestilential visitation of the *Yellow Fever*, is justly a subject of general gratulation, and solemn thankfulness, and it is to be hoped that the same vigilance that, under Providence, has guarded us from its scourge, will be the means of shielding our city from its future visitations.

GEORGE CUMING,

City Inspector.

New-York, Jan. 11th, 1819.

Statement of Deaths, with the diseases and ages, in the City and Liberties of Philadelphia, from the 1st of January 1818, to the 1st of January 1819.

DISEASES.	Under 1 year	From 1 to 2	From 2 to 5	From 5 to 10	From 10 to 15	From 15 to 20	From 20 to 30	From 30 to 40	From 40 to 50	From 50 to 60	From 60 to 70	From 70 to 80	From 80 to 90	From 90 to 100	From 100 to 110	Total
Apththæ - - - -	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5
Asthma - - - -	0	0	1	0	0	0	0	0	1	1	4	1	0	0	0	8
Abscess - - - -	0	1	0	1	0	0	5	3	0	1	0	0	0	0	0	11
Atrophy - - - -	12	9	1	4	0	0	2	3	4	2	5	4	0	0	0	46
Apoplexy - - - -	0	1	0	0	0	0	6	3	7	8	9	5	1	0	0	40
Angina Pectoris - -	1	0	0	2	0	0	0	0	3	3	0	0	0	0	0	9
Aneurism - - - -	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	3
Burns - - - -	0	1	4	1	0	0	5	2	0	0	0	0	0	0	0	13
Cholera Morbus - 105	68	19	3	1	0	0	0	2	4	1	0	0	0	0	0	203
Catarrh - - - -	8	0	1	1	0	0	1	3	0	1	1	0	0	0	0	16
Consumption of } the Lungs	4	8	2	3	3	22	95	127	70	53	14	12	3	0	0	396
Convulsions - - - 107	7	3	4	1	1	4	5	2	3	2	1	1	0	0	0	141
Chorea - - - -	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Casualties - - - -	5	0	1	1	3	0	4	5	10	1	0	1	0	0	0	31
Cancer - - - -	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	4
Caries - - - -	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3
Colic - - - -	0	1	0	0	0	0	0	1	2	2	1	0	0	0	0	7
Debility - - - -	38	4	4	2	0	1	7	5	5	5	9	7	2	0	0	89
Dyspepsia - - - -	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
Dysentery - - - -	7	5	2	3	0	0	4	5	2	1	2	0	0	0	0	31
Dropsy - - - -	4	1	3	3	2	2	16	19	20	9	7	9	3	1	0	99
in the Head - - - 24	20	11	10	2	0	0	0	0	0	0	0	0	0	0	0	67
in the Breast - - -	0	0	0	0	0	0	1	2	0	0	0	2	0	0	0	5
Decay - - - -	4	7	1	1	0	0	1	5	7	1	3	7	1	0	0	38
Diarrhœa - - - -	9	6	4	0	0	0	2	10	6	5	3	1	2	0	1	49
Drowned - - - -	0	0	1	3	3	3	14	12	2	1	0	0	0	0	0	39
Drunkenness - - -	0	0	0	0	0	1	2	3	3	0	1	0	0	0	0	10
Drinking cold water	0	0	0	0	0	0	4	2	1	0	2	0	0	0	0	9
Diabetes - - - -	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Epilepsy - - - -	0	0	1	0	0	1	2	3	1	1	0	0	0	0	0	9
Erysipelas - - - -	3	0	1	0	0	0	0	0	0	1	1	0	0	0	0	6
Fever - - - -	8	3	2	1	1	0	11	9	8	4	5	4	2	1	0	59
Typhus - - - -	0	0	1	1	4	7	70	86	66	40	23	7	5	1	0	311
Puerperal - - - -	0	0	0	0	0	1	7	8	0	0	0	0	0	0	0	16
Remittent - - - -	1	2	3	0	2	4	8	14	11	6	4	0	0	0	0	55
Bilious - - - -	0	0	0	0	1	1	9	9	8	3	3	0	0	0	0	34
Nervous - - - -	0	0	0	0	1	2	1	2	4	0	0	0	1	0	0	11
Inflammatory - - -	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	3
Intermittent - - -	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
Hectic - - - -	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	3
Scarlet - - - -	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Gangrene - - - -	4	0	1	0	1	0	2	2	1	3	1	3	0	1	0	21
Gout - - - -	0	0	0	0	0	0	0	1	0	0	1	1	2	0	0	5
Hives - - - -	17	16	12	3	0	0	0	0	0	0	0	0	0	0	0	48
Hooping Cough - - -	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6
Carried over,	371	161	82	49	25	48	286	354	256	137	104	65	27	3	2	1960

	Under 1 year	From 1 to 2	From 2 to 5	From 5 to 10	From 10 to 15	From 15 to 20	From 20 to 30	From 30 to 40	From 40 to 50	From 50 to 60	From 60 to 70	From 70 to 80	From 80 to 90	From 90 to 100	From 100 to 110	Total
<i>Brought forward,</i>	371	161	82	49	25	48	286	354	256	137	104	65	27	3	2	1969
Hæmorrhage - - -	1	0	0	1	0	0	0	1	1	1	0	0	0	0	0	6
Hernia - - - - -	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	4
Insanity - - - -	0	0	0	0	0	0	13	14	5	8	1	0	0	0	0	41
Jaundice - - - -	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
Inflammation of the Brain }	3	3	0	4	2	2	3	3	1	1	0	0	0	0	0	22
of the Lungs - -	12	5	6	1	0	1	6	12	2	1	1	2	0	0	0	49
of the Stomach -	8	1	2	0	1	1	4	4	6	2	3	0	0	0	0	32
of the Bowels - -	20	3	3	2	0	2	5	3	1	0	1	2	2	0	0	44
of the Liver - -	2	0	1	0	0	0	4	6	2	4	0	1	1	0	0	21
of the Bladder -	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Locked Jaw - - -	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3
Old Age - - - - -	0	0	0	0	0	0	0	0	0	0	2	8	33	19	3	65
Pleurisy - - - - -	4	1	2	1	1	1	5	3	1	1	3	2	0	0	0	25
Palsy - - - - -	0	0	0	0	1	1	3	2	7	10	9	2	2	0	0	37
Rheumatism - - -	0	0	0	0	0	1	0	2	0	1	2	3	1	0	0	10
Rickets - - - - -	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Syphilis - - - - -	1	1	0	0	0	0	7	3	0	0	0	0	0	0	0	12
Suffocation - - -	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	4
Serofula - - - - -	1	2	3	2	1	0	1	4	1	2	1	0	0	0	0	18
Still Born - - - -	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156
Sudden - - - - -	2	0	0	0	0	0	5	6	4	4	8	0	0	0	0	29
Sore Throat - - -	6	2	5	3	0	0	1	0	0	0	0	0	0	0	0	17
Spina Bifida - - -	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
Suicide - - - - -	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Small Pox natural	0	0	1	1	1	1	3	0	1	0	0	0	0	0	0	8
Scirrhus of the Stomach }	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3
Spasm in the Sto- mach }	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Stone - - - - -	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
Tabes - - - - -	5	1	2	0	0	0	3	0	0	0	0	0	0	0	0	11
Teething - - - - -	6	10	1	0	0	0	0	0	0	0	0	0	0	0	0	17
Ulcers - - - - -	0	0	0	0	1	0	2	1	2	1	0	0	0	0	0	7
Worms - - - - -	1	3	3	0	0	0	0	0	0	0	0	1	0	0	0	8
Unknown - - - - -	26	20	6	2	2	1	17	22	23	8	1	2	0	0	0	132
<i>Total,</i>	618	214	118	68	35	59	370	446	316	187	138	90	67	24	5	2765

NOTE. Of the above there were 925 males of twenty years and upwards, 512 under twenty years; of females, 754 of twenty years and upwards, 441 under twenty years; and 133 children, principally under one year, whose sex is unknown.

Deaths in each month of the above period.

	Adults.	Children.	Total.		Adults.	Children.	Total.
January - - -	163	72	235	October - - -	95	74	169
February - - -	150	61	211	November - - -	139	59	198
March - - - -	151	89	240	December - - -	120	76	196
April - - - - -	161	75	236				
May - - - - -	138	66	204	<i>Total - - -</i>	1651	1114	2765
June - - - - -	149	71	220				
July - - - - -	143	178	321	By order of the Board of Health,			
August - - - -	137	175	312	JOSEPH PRYOR, Clerk.			
September - - -	105	118	223	Health Office, February 3d, 1819.			

Report of Interments in the City of Baltimore, from the first day of January, 1818, to the first day of January, 1819, taken from the Records of the Board of Health.

<i>Deaths in each month.</i>	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>	<i>Of whom colored.</i>	<i>AGES.</i>	
January, . . .	63	50	113	41	Still Born,	96
February, . . .	65	44	109	43	1 year and under,	499
March, . . .	52	36	88	29	From 1 to 2	190
April, . . .	72	60	132	48	2 to 5	53
May, . . .	65	39	124	50	5 to 10	62
June, . . .	64	48	112	31	10 to 20	154
July, . . .	143	108	251	68	20 to 30	251
August, . . .	158	84	242	71	30 to 40	210
September, . . .	108	95	203	53	40 to 50	107
October, . . .	106	88	194	54	50 to 60	69
November, . . .	61	47	108	32	60 to 70	43
December, . . .	98	58	136	54	70 to 80	37
					80 to 90	26
					90 to 100	13
					100 to 110	2
Totals,	1055	757	1812	574	Total,	1812

<i>Places of Interment.</i>	<i>Adults.</i>		<i>Children.</i>		<i>Total.</i>	<i>Of whom colored.</i>
	<i>Men.</i>	<i>Women.</i>	<i>Boys.</i>	<i>Girls.</i>		
Alms House Burial Ground,	50	35	6	5	96	32
Baptist—First, - - -	7	10	8	3	28	1
Second, - - -	8	8	5	1	22	1
Dunkard's, - - -	0	0	2	0	2	0
Episcopalians—Christ Church,	9	7	9	6	31	0
St. Paul's, - - -	23	11	17	6	57	0
St. Peter's, - - -	6	7	9	5	27	1
Trinity, - - -	5	6	8	7	26	0
Friends—East of Jones' Falls,	5	0	4	3	12	0
West of do. - - -	1	1	0	1	3	0
German—Lutheran, - - -	32	14	16	18	80	0
Reformed, - - -	10	1	10	3	24	0
Evangelical Reformed,	4	2	1	0	7	0
Methodist—African, - - -	14	32	21	38	105	105
Bethel, - - -	0	0	0	0	0	0
Eutaw, - - -	0	0	0	0	0	0
Fell's Point, - - -	23	18	27	28	96	19
Light Street, - - -	29	26	53	21	129	0
Old Town, - - -	42	24	56	33	155	0
New Jerusalem Temple, - - -	4	1	2	2	9	0
Amount carried forward,	272	203	254	180	909	159

Amount brought forward,	272	203	254	180	909	159
Potters Field—East	-	-	129	62	73	52
West,	-	-	39	44	71	43
Presbyterians—First,	-	-	19	12	12	17
Second,	-	-	11	7	13	9
Associate Reformed,	2	5	13	7	27	0
Roman Catholic—St. John's,	8	2	5	6	21	2
St. Patrick's,	24	20	33	17	94	10
St. Peter's,	34	41	41	30	146	8
Jews,	-	-	1	0	2	0
Total,	539	396	516	361	1812	574

DISEASES.

Apoplexy,	-	-	2	Hives,	-	-	-	3
Asthma,	-	-	6	Jaundice,	-	-	-	4
Burn,	-	-	7	Intemperance,	-	-	-	14
Catarrh,	-	-	3	Inflammation,	-	-	-	3
Cancer,	-	-	7	of the Lungs,	-	-	-	29
Casualty,	-	-	19	of the Bowels,	-	-	-	4
Child-Bed,	-	-	19	of the Brain,	-	-	-	14
Cholera-morbus,	-	-	280	Influenza,	-	-	-	2
Colic,	-	-	15	Locked Jaw,	-	-	-	3
Consumption,	-	-	306	Mortification,	-	-	-	23
Convulsions,	-	-	115	Murdered,	-	-	-	3
Cramp in the Stomach,	-	-	1	Mumps,	-	-	-	1
Croup,	-	-	52	Old Age,	-	-	-	62
Decay,	-	-	86	Palsy,	-	-	-	12
Dropsy,	-	-	37	Pleurisy,	-	-	-	63
in the Head,	-	-	18	St. Anthony's Fire,	-	-	-	2
Drowned,	-	-	27	SMALL POX,	-	-	-	1
Dysentery,	-	-	31	Sore Throat,	-	-	-	1
Fever,	-	-	3	Still Born,	-	-	-	96
Bilious,	-	-	70	Sudden Death,	-	-	-	34
Intermittent	-	-	6	Suicide,	-	-	-	9
Nervous,	-	-	7	Teething,	-	-	-	16
Remittent,	-	-	1	Whooping Cough,	-	-	-	1
Typhus,	-	-	85	Worms,	-	-	-	91
Flux,	-	-	6	Unknown,	-	-	-	109
Gravel,	-	-	2					
Gout,	-	-	1	Total,				1812

By order of the Board of Health,
SAMUEL YOUNG, Sec'y.

N. B. In noting the increased number of Deaths, reported during the last year, it is proper to observe, that the interments from the Alms House, were not included in any former report—The Commissioners of Health deem it their duty again to remark, as one great benefit resulting from the publication of these annual lists of mortality, is the ascertaining with correctness, the predo-

minant diseases of each season, to do which it is necessary to note with technical precision, the different disorders that have proved fatal; at the same time that they lament their present limited means for accomplishing this object, avail themselves of the present opportunity to solicit the aid of all practising Physicians and relatives of diseased persons, that by communicating information to the respective Sextons where interments take place, of the cause of the deaths that may happen, the difficulty they at present labour under may be obviated, and the future annual bills of mortality be presented to the public with all possible accuracy.

Interments in the City of Richmond, Virginia, in the Year 1818.

<i>Deaths in each Month.</i>				<i>Total.</i>	<i>AGES.</i>			
					Under	1 Year		
January, . . .				10	From	1 to	3	77
February, . . .				7		3 to	5	25
March, . . .				16		5 to	10	15
April, . . .				11		10 to	20	9
May, . . .				15		20 to	30	11
June, . . .				16		30 to	40	37
July, . . .				36		40 to	50	29
August, . . .				39		50 to	60	11
September, . . .				34		60 to	70	13
October, . . .				27		70 to	80	14
November, . . .				15		80 to	90	1
December, . . .				16				0
Total,				242	Total,			
								242

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Asthma, . . .	1	Hydrophobia, . . .	2
Apoplexy, . . .	3	Intemperance, . . .	2
Affection of the Brain, . . .	1	Jaundice, . . .	1
Accidental Deaths, . . .	4	Liver Complaint, . . .	5
Bowel Complaint and } Teething, }	63	Measles, . . .	2
Consumption, . . .	18	Pleurisy, . . .	5
Child Bed, . . .	5	Quinsy, . . .	1
Cholera Morbus, . . .	1	Rheumatism . . .	1
Colic, . . .	1	Still Born, . . .	18
Cold, . . .	3	Sudden Deaths, . . .	3
Croup, . . .	1	Strangulated Hernia, . . .	1
Convulsions, . . .	3	St. Anthony's Fire, . . .	1
Debility, . . .	46	Unknown, . . .	4
Dropsy, . . .	4	Worms, . . .	4
Fever, Bilious, . . .	31	Whooping Cough, . . .	1
— Nervous, . . .	5		
Hæmorrhage, . . .	1	Total,	242

*Return of Deaths in the City of Charleston, S. C. from the first of
October, 1817, to the first of October, 1818.*

<i>Deaths in each Month.</i>	<i>Total.</i>	<i>AGES.</i>			
October, . . .	128	Under 3	Years		324
November, . . .	88	From 3	to 10		84
December, . . .	64	10	to 20		57
January, . . .	55	20	to 30		124
February, . . .	65	30	to 40		132
March, . . .	74	40	to 50		98
April, . . .	63	50	to 60		65
May, . . .	71	60	to 70		53
June, . . .	89	70	to 80		34
July, . . .	111	80	to 90		19
August, . . .	119	90	to 100		3
September, . . .	76	100	to 110		0
		110	to 120		2
Total,		Total,		995	

*The above mentioned Deaths were caused by the following Diseases
and Casualties, viz.*

Abscess, . . .	4	Influenza, . . .	1
Accident, . . .	15	Inflammation of the Brain, . . .	2
Apoplexy, . . .	8	Lungs, . . .	11
Asthma, . . .	8	Insanity, . . .	4
Cancer, . . .	8	Intemperance, . . .	7
Catarrh, . . .	21	King's Evil, . . .	4
Chicken Pock, . . .	2	Liver Complaint, . . .	7
Child Bed, . . .	14	Lock Jaw, . . .	20
Colic, . . .	7	Mortification, . . .	2
Consumption, . . .	151	Old Age, . . .	46
Convulsions, . . .	37	Palsy, . . .	6
Cramp, . . .	5	Pleurisy, . . .	7
Croup, . . .	7	Rash, . . .	1
Debility, . . .	69	Rheumatism, . . .	5
Diarrhœa, . . .	79	Rupture, . . .	1
Dropsy, . . .	64	Scrophula, . . .	3
Drowned, . . .	21	Scurvy, . . .	1
Dysentery, . . .	7	Sore Throat, . . .	11
Fever, Bilious, . . .	40	Spasm, . . .	11
— Catarrhal, . . .	19	Sudden death, . . .	8
— Hectic, . . .	3	Suicide, . . .	3
— Nervous, . . .	15	Teething, . . .	43
— Typhus, . . .	17	Thrush, . . .	7
— Worm, . . .	52	Unknown, . . .	22
— Yellow,* . . .	38	Violence, . . .	2
Gravel, . . .	1	Whooping Cough, . . .	41
Jaundice, . . .	3	White Swelling, . . .	1
Imposthume, . . .	1		
Total,		Total,	
		995	

[* See page 296.]

Of the foregoing there were—

Males, - - - 572

Females. - - - 423

Of whom there were— 995

Whites, - - - 404

Blacks, - - - 591

— 995

The cases of Consumptions were generally Strangers, who came to Charleston for the benefit of their health.

By order of the Board,

JAMES A. MILLER, Clerk.

Examined and found correct,

DANIEL STEPHENS,

November 12, 1818.

Chairman.

* The Yellow Fever Cases occurred during the months of October and November of the year 1817.—If the respectable gentlemen composing the Board of Health of the City of Charleston, had seen the propriety of commencing their Report, as is done in other Cities of the United States, on the first day of January, and closing it on the last day of December, in each year, the term Yellow Fever would not have been mentioned in the preceding Report, as no case of it occurred in Charleston during the year 1818.

LONDON BILL OF MORTALITY.

A general bill of all the Christenings and Burials, from December 16, 1817, to December 15, 1818.

Christened in the 97 Parishes within the walls, 1048; Buried, 1204.

Christened in the 17 Parishes without the walls, 5317; Buried 4078.

Christened in the 23 out-Parishes in Middlesex and Surrey, 13,410, Buried, 10,099.

Christened in the 10 Parishes in the City and Liberties of Westminster, 4,458; Buried, 4324.

Christened—Males, 12,530; Females, 11,703. In all 24,233.

Buried—Males, 9383; Females, 9822. In all 19,705.

OBITUARY.

Died in Philadelphia, February 22d, 1819, DR. ISAAC CATHRALL, aged fifty-five years.

On the 29th of March, 1819, DR. JOSHUA KERSEY, aged thirty-eight years.

Died April 1st, 1819, DR. JAMES DUNLAP, aged seventy years.

THE
ECLECTIC REPERTORY

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JULY, 1819.

No. III.

SELECTED PAPERS.

On the Comparative Infrequency of Urinary Calculi among Seafaring People. By A. COPLAND HUTCHISON, Esq. Surgeon Extraordinary to his royal highness the Duke of Clarence, Surgeon to the Westminster General Dispensary, and late Surgeon to the Royal Naval Hospital at Deal.

[From the Medico Chirurgical Transactions, Volume IX.]

ON perusing Dr. Marcet's valuable essay on the chemical history of the different species of Urinary Calculi, and the medical treatment of the diseases consequent thereon, I was pleased to find that he had embraced the subject of the comparative frequency of calculous disorders in certain countries and districts, although he candidly acknowledges, that it still remains for future inquiries to discover, whether the frequency of stone cases in one particular district over that of another, be imputable to some peculiarities in the habits and occupations of its inhabitants, or to locality of situation and climate.

Impressed with the importance of the subject, as it regards a knowledge of the disorder, its pathology, and treatment, which such an inquiry cannot fail materially to promote; and feeling it to be the duty of every professional man to contribute the result of his observations in aid of an investigation so

ably commenced, I beg leave to submit to the attention of the society a few remarks on the comparative infrequency of calculous disorders among seafaring people. I feel myself the more strongly impelled to the task, from having noticed the circumstance many years ago, and from the distinguished author of the above essay not having devoted any portion of his work to the consideration of a class of men, to the treatment of whose diseases my attention has been principally directed for a period of sixteen years.

The number of seamen and marines annually voted by parliament to man the British navy, from January 1800 to the 31st of December 1815, has, on an average, amounted to 132,000. Now if we take into consideration the vast expenditure of human life by battle, disease, and various other casualties, and which unavoidable loss is necessarily required to be constantly replaced, the total number cannot be estimated at less than 162,000, making an annual fluctuation of 30,000 new raised men to supply the deficiencies; but we must bear in mind; that nine-tenths of this number were men who had served at sea from a very early period of life, or, in other words, were old and experienced seamen.*

I have taken considerable pains to ascertain the prevalence

* The number of men lost to the service from various causes during three of the last years of the war I procured at the admiralty office, and is as follows:

In 1811	33,898
1812	27,009
1813	26,049

Seamen and marines voted by parliament for each
of these three years 145,000

The average loss of these years gives only about 29,000 in place of 30,000 as stated in the text; and according to the number voted it makes a waste of about one in five; but in these three years the war was chiefly conducted at home, the number of ships serving on unhealthy stations was considerably reduced, and during this period no general action had been fought at sea. There is another circumstance which caused a greater waste in the earlier years of the war than has been here stated from documents, namely, the very little prospect that appeared to the seamen of any termination to hostilities, which certainly influenced the men to desert in greater numbers than in the last years of the war, when the probability of a speedy termination of their labours and consequent liberation was at hand.

of calculous disorders in the naval service; and the result of my inquiry is, that out of the mass of individuals of which it is compos-d, only *eight cases* have occurred in the period of the *sixteen years* before specified, all of whom had been operated upon in the naval hospitals of Haslar, Plymouth, or Deal, and of whom one only died. In the other royal hospitals, namely, Yarmouth and Peignton, no patient labouring under urinary calculus having been admitted, I have purposely omitted taking them into the account, as well as the foreign hospitals of Halifax, Jamaica, Antigua, Barbadoes, Gibraltar, Malta, the Cape, and Madras; being satisfied, after the strictest examination, that the operation of lithotomy had never been performed at any of these establishments. If cases of this kind had occurred abroad, and owing to the unfavourable nature of the climate or other causes, the surgeons had deemed it not advisable to operate, the patient so circumstanced would have been forwarded to the great naval hospitals at home; and, therefore, we shall be fully warranted in concluding, that eight cases of stone only, had really occurred, among the vast mass of seamen and marines composing our naval force at home and on foreign stations during that eventful era, that is, between January 1800 and December 1815.

The commissioners for conducting the sick and wounded department of the navy, with their accustomed liberality, directed that I should be furnished with the subjoined document, showing the total number of seamen and marines received into the three hospitals during the above sixteen years, exclusive of soldiers, Russians, and prisoners of war, making the grand total of 96,000; which, on deducting in round numbers 10,000 for gunshot wounds, accidents, &c. admitted into the hospitals beyond the average number of such cases received into the London and provincial hospitals, on account of the peculiar service to which the naval hospitals are appropriated, gives only one calculous case in 10,750 patients.

VICTUALLING OFFICE, 23d MARCH, 1818.

AN ABSTRACT

Showing the number of sick and wounded seamen received into Haslar, Plymouth and Deal Hospitals, between the 1st of January, 1800, and the 31st of December, 1815.

YEAR.	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	TOTAL.
Haslar	4835	2781	1925	1144	1496	1727	1900	1892	1907	2521	3236	3273	3018	2890	3056	2442	40,043
Plymouth	6028	4683	2111	1420	3596	3490	3137	1897	2453	2624	3019	2660	2806	2917	3644	1967	48,452
Deal	965	538	92	226	548	554	391	357	562	781	625	347	658	585	584	389	8,202
Grand Total,																	96,697

By order of the Board,

(Signed)

J. T. LEE.

Dr. Marcet states the proportion of stone cases received into the different British and Continental public hospitals, Norwich alone excepted, to be *one* for every *three* or *four hundred* patients of all descriptions admitted. In the Norwich hospital it appears to be *one* in every *thirty-eight* cases, a proportion prodigiously great, and which places in a striking point of view, the untoward prevalence of this afflicting malady in the Norfolk district over that of every other throughout Europe; as far, at least, as our present knowledge extends, from whatever cause that extraordinary circumstance may arise. The paucity of stone cases occurring in tropical climates has also been remarked by Dr. Marcet; and as far as the fact already stated goes, of no patients labouring under the disease in question having been admitted into our foreign hospitals, it tends to strengthen the observation.

Of the eight cases of calculous concretions before mentioned, as having occurred out of the vast mass of patients admitted into our naval medical establishments in England, two were boys about fourteen years of age, who had laboured under symptoms of stone for some years previously to their admission into the service, and into which they had recently entered, expressly for the purpose of deriving benefit from our magnificent institutions; one was a marine, about twenty-two years of age, who had been at sea a few months only; three were adult seamen, and the seventh a marine; but their length of service afloat *could not be at all* ascertained;* the eighth and last case was a warrant officer, advanced in years, who had been serving in ordinary, that is, in a ship in harbour, for a considerable time previously to the operation, and the only case which terminated fatally.

For these short historical particulars I am chiefly indebted to my friend Dr. Baird, inspector-general of naval hospitals, who, with his wonted zeal for the public service, furnished me with the above facts.†

* Since this paper was sent to the press, the author has ascertained that one of these patients, cut by Dr. Veitch at Plymouth Hospital, was a Prussian by birth.

† Subsequently to the period embraced in these returns, viz. in May 1816, a boy was operated upon in Haslar hospital and recovered, who had been

In the admissions into naval hospitals, both officers under the rank of captain, and privates are included; and excepting the case of one warrant officer, whose diet differs not materially from that of the seamen, it will be found that no officer has undergone the operation of lithotomy in any of these establishments. It is but just, however, to notice the cases of two naval gentlemen, the one a captain, the other an hospital surgeon, who were operated upon in London, as I have been since informed; but whether the first contracted symptoms of the complaint at sea or while residing on shore, I have not been fortunate enough to discover.

It is necessary to observe, that the general food of the superior classes of officers, is infinitely more acescent than that commonly used by the seamen and marines; and also, that they command distinct apartments to sleep in, more cool, and consequently better ventilated than the parts appropriated to the men; but the water for general use is common to every description of persons on board ships of war.

In well regulated messes of the principal officers, their diet differs but little from people on shore; but with respect to other classes of the ship's company the difference is considerable, as they are unavoidably compelled to subsist often, for months successively, on salt beef and pork.

On the ship's arrival in port, the men are amply supplied with good fresh beef, vegetables, and sound table beer while victualling and watering, which, however, in time of war, is generally limited to a very short period, especially when commanded by an active and zealous captain. On those occasions, it is incredible to see what quantities of salt the seamen will use with their fresh beef. During their stay in port, and for some days after, each man is allowed a gallon of good beer; and at other times, when this wholesome beverage can no longer be procured, a pint of wine or half a pint of spirits in lieu thereof: the latter previously diluted with three portions of water, is served out daily to each man at two distinct periods.

turned ashore from a merchant vessel at Barbadoes, and was, by the captain of the *Espiegle* sloop of war, humanely taken on board and brought to England for the purpose of undergoing the operation.

The beef or pork commonly issued to the ship's company at sea is so highly salted, and frequently kept so long in its briny pickle, that its bland and nutritious juices are in great measure exhausted. Excepting in ships of war of the first and second rate, a portion of one deck only is appropriated to the whole ship's company to sleep in, and this is consequently so crowded with hammocks, and the men so impacted together, fourteen inches in width being the total space allowed to each individual, that some dexterity is requisite to obtain ingress and egress to and from their beds. The lower deck being always the part allotted for repose, the ports are, for the safety of the ship necessarily closed all night, and the temperature of the surrounding air is thereby so exalted, that the place becomes a kind of steam bath from animal exhalation, the men being literally immersed in their own perspiration.*

Dr. Dobson remarks, that calculous disorders are much more frequently met with in the cyder counties than in other parts of England;† and as it would appear from what has been here advanced, that seamen, who have rarely opportunities of indulging in the use of malt liquors, are in a great measure exempt from urinary concretions, it may therefore be asked, whether all kinds of fermented liquors be not favourable to the production and accretion of such disorders?

From Dr. Marcet's and Dr. Prout's remarks it would appear, that an active and healthy state of the digestive organs is one of the most effectual preventives against the formation of calculi. May it not therefore happen, in the instance of sea-faring men, that the peculiarities of their regimen, and especially the great quantities of muriate of soda they habitually take with their food, contribute to produce this effect?‡ or in other words, shall we be justified in imputing to the stimulus communicated to and maintained in the whole chylopoetic

* See sir Gilbert Blane's excellent paper on the comparative health of the navy, published in the sixth volume of the Transactions of this Society; and also, some practical Observations in Surgery, by A. Copland Hutchison, published in 1816, pp. 77 and 78.

† See Dr. Dobson's Commentary on Fixed Air, third edition, published in 1779.

‡ See Dr. Marcet's Essay, p. 176, and Dr. Prout's valuable paper in the eighth volume of the Transactions of this Society, pages 543, 544, 545.

viscera by the muriate of soda, a power to counteract the aggregation of calculous matter in the urinary organs, independently of any direct chemical agency?

It has been already stated, that seamen belonging to ships of war are so closely impacted whilst in their hammocks, that they continue suffused with perspiration during the whole period allotted to repose: and there is also such a perpetual mutation in the various stations appointed to ships of war to cruise in, that few seamen escape the performance of their round of duty in tropical and other hot climates, bearing an equal proportion to the time spent in the more temperate climate of Europe; and consequently there must be a much more profuse discharge from the exhalants on the surface of the body of this class of men, than of those residing in Great Britain or in more northern latitudes.

I am the more particularly induced to notice these circumstances, because it has been ingeniously suggested, among other causes, "whether there may not be some essential connexion between the state of the cutaneous functions and the greater or less prevalence of this class of disorders?"*

That an intimate connexion does subsist between a particular state of the cutaneous functions and a tendency in the urinary secretions to form calculous concretions, I am inclined to believe; but in this early stage of the inquiry into the grounds for such opinion, I deem it more consonant to the circumspection necessary to be observed in speculative medicine, to withhold the view which I have taken of this part of the subject, till confirmed by more certain and conclusive *data* than we at present possess.

With the view of ascertaining, with every degree of accuracy, and through every possible channel from which information could be derived, the validity of the opinion herein maintained, of the almost total exemption of seafaring people from calculous affections, I made due inquiry of sir E. Home and my friends Messrs. Cline, sen. and Astley Cooper, whether, in the course of their extensive practice, both private and public, they could recollect having performed the operation of

* See Marcet's Essay, page 44.

lithotomy on any of the description of persons here alluded to? The two former gentlemen fully answered in the negative, to the best of their recollection at the time; and Mr. Astley Cooper informs me, that he had been consulted a few years back by Admiral B. D——s, then labouring under evident symptoms of stone, but that he had not been operated upon; the stone, however, was ascertained to be of that species called *Mulberry*, by a portion being broken off by the sound and passed *per urethram**.

Excepting this solitary case, conjoined, however, to that of the captain and hospital surgeon before mentioned, Mr. Cooper stated that no other instance had occurred in the course of his practice. This eminent practitioner also asserts, that the surgeon here alluded to had been affected with calculous symptoms from his very *childhood*.

The circumstance mentioned by Dr. Dobson, page 153, of his work, likewise deserves notice in the present investigation, viz. the rare occurrence of stone cases in the Liverpool hospital, compared to that of other public institutions appropriated, to similar purposes. May not this singularity arise from a great proportion of patients admitted into the hospital of this great emporium of British commerce, being composed of seamen or seafaring people?

The various and concurring facts already enumerated, tend to illustrate and confirm the position we are endeavouring to establish, namely, that there is something in the occupation, food, drink, and general habits of seamen, added to frequent change of climate, which render this class of men more peculiarly exempt from calculous depositions than any other.

The life of a seaman is one of great activity, and often of considerable labour and exertion. I have frequently observed, in common with other officers, that sailors never fail to empty the bladder on the first symptoms of distention; and the facilities afforded them, as far as regards unmixed society

* Admiral B. D. died only about six months ago, and I learn at the Admiralty Office that he had *not* been employed at *sea* for the last twenty years of his life.

and locality, favour greatly this salutary habit. It is also of importance to notice, that no description of people are less subject to dyspepsia*, or more prone to strictures in the urethra.

People of sedentary habits, on the contrary, offer great facility of aggregation and increase to any minute calculous deposition in the bladder; where they gradually acquire magnitude by continual accumulation of fresh matter, so as to render the distress and acute sufferings of the patient intolerable, and compel him to submit to the operation of lithotomy as the only mode of obtaining permanent relief: and hence it is, that lawyers and other studious men who sit much, and are in habits of retention, are said to be more subject to the disease in question, than those devoted to the more active scenes of life and greater muscular exertion†.

To these observations it may be objected, that Calculi are more generally formations of early youth than those of adult or of advanced age; and the men who enter or are impressed into the public service undergo an examination respecting their state of health, and are rejected if found to be labouring under any serious complaint; but when we reflect on the manner of carrying on the surgical examination on these occasions, it will be acknowledged by those best acquainted with the nature of that service, that they are not *particularly* scrupulous as to admissions: besides, it has been shown in the cases of the two boys operated upon, that they entered the navy for the express purpose of getting cured, and consequently took care to conceal their disease. The fact is, that boys are frequently embarked at the early ages of nine or ten years, and when we take into consideration the vast exertions made by officers, and the various impress gangs to man ships of war fitting in harbour, or to keep up their numbers in those already at sea, the validity of the above objections will be greatly lessened, if not wholly removed.

Again, in the number of patients received into the naval hospitals, as compared to the admissions into the different Lon-

* See various parts of Murray Forbes's work on Gravel and Gout.

† See also page 38 of the same work.

don and provincial hospitals, it must not be forgotten, that in the latter, those admitted are composed of both sexes, whereas in the former, the admissions are confined solely to the male sex; and it will be found on a reference to Dr. Marcet's report from the Norwich hospital, (page 26,) that the proportion of females operated upon, is to that of males as *one to seventeen*. It is therefore but just that these facts should also have their due weight in balancing the argument.

Moreover, it is not to be omitted, that out of the *eight* cases stated to have been admitted into the naval hospitals from 1800 to 1815, both years included, *three* out of the eight were known to have entered the service labouring under the disease; so that in point of fact, *five* only are justly to be considered as having originated among the vast mass of individuals composing the British navy, in the eventful space of sixteen years, and these years of unexampled efforts and more strenuous exertion than any in British annals.*

In that magnificent and extensive asylum for decayed seamen, the royal hospital at Greenwich, Dr. Robertson, the physician to the institution, informs me, that during his professional attendance there for twenty-seven years, he cannot recollect a single instance of the operation of lithotomy having been performed, and only one case in which symptoms of Calculus were manifest. He states, however, that in dissecting, he discovered small Calculi in the kidneys and ureters of some of the pensioners after death.

The number of mutilated or otherwise infirm seamen and marines accommodated in that noble institution, exclusive of officers, is 2710; and the admissions on an average annually to fill up the vacancies occasioned by death or removal as out-pensioners, is about 213. All ages, from twelve years to the most advanced period of life, are eligible for admission.

From various parts of the preceding premises, then, we may with some degree of probability infer, that animal food, combined with a certain portion of the muriate of soda, in conjunction with farinaceous aliment, on which seamen principal-

* *Five* cases of stone occurring out of 86,000 hospital patients give only *one* in 17,200.

ly subsist, are favourable to the prevention of calculous aggregation.

To acquire this prophylactic property, it may be essential that the animal food should be saturated with salt previously to its use, as we learn from Dr. Wollaston, that when free from saline matter, animal food favours the generation of lithic acid, at least in carnivorous birds*: whether similar effects follow its application to the human stomach, has not yet been ascertained, I believe; but reasoning from analogy, we might be induced to conclude that such would be the consequence.

With respect to the practical inferences to be deduced from almost the total absence of calculous disorders in tropical regions, the exhibition of sudorifics would appear to be indicated, as offering a prospect of preventing the malady altogether, or of alleviating its further progress when once established. It is well known that the cuticular exudations are vicarious with the renal secretions, and the most superficial observer must have witnessed, that when the cutaneous discharges are abundant or increased, micturition is proportionably diminished. Dr. Wilson has remarked, that Dover's powder and tartarized antimony, (which are powerful sudorifics,) when administered to individuals, invariably lessen the quantity of lithic acid in the urine†.

From the foregoing observations it would appear, that exercise is not only conducive to general health, but acts as a preventive to the disease in question, and probably may be used with material advantage even when Calculi are known to exist; the *quantum*, of course, to be regulated by the magnitude or irritation produced by the Calculus on motion.

It is generally believed, that acid and the acescent fluids, such as cyder, malt liquors, and French wines, favour the generation of lithic gravel: if similar results arise from the use of fresh animal food, according to the analogy which Dr. Wollaston's experiments have suggested, farinaceous and that spe-

* See Philosophical Transactions for 1810, page 229.

† See Dr. A. P. Wilson's experiments detailed in an appendix to his book on Fever, &c. pages 494, 500, 527, 529, and 533. See also a treatise on Gravel and Gout, by Murray Forbes, page 235, a work that will be read with pleasure and improvement by all who are interested on this subject.

cies of food opposed to the acescent would necessarily be indicated. On these points, however, I beg to speak with much diffidence and reserve, not possessing sufficient *data* or experience to hazard any thing like decisive opinion: but from the extensive circulation of the volumes and labours of this Society, we may expect sooner or later, that the present subject will receive ample investigation and elucidation*.

Spring Gardens, Charing Cross,

May 10, 1818.

Appendix to the preceding Paper.

This Society having done me the honour to read in May last, a paper on the comparative infrequency of stone cases among seafaring people, I have since that period, at the request of the President and some members of the Council, made more minute inquiry throughout the medical department of the service, whether any seamen or marines had ever been invalided at the great medical establishments labouring under calculous affection; and the general reply officially returned was, that no records were preserved of the diseases for which seamen had been invalided; but the surgeons positively assert, that no instance had occurred at the royal hospitals of patients so affected being invalided previously to having undergone the operation of lithotomy†.

The period of the recess afforded me, also, the favourable opportunity of extending my researches to every seaport town in the kingdom where public hospitals or dispensaries had been established, and from which I could derive information by

* For some very interesting and valuable information on Urinary Calculi, see a paper by W. Brand, Esq. Secretary to the Royal Society; in the volume of the Philosophical Transactions of London for the year 1808; and some facts illustrative of the above paper by sir E. Home in the same volume: also a paper by Sir Gilbert Biane in the third volume of the Medical and Surgical Transactions.

† All invalidings from the service must necessarily take place at one or other of the naval hospitals at home, whether the objects for survey be patients in the hospital, or are brought on shore from ships in port; and the principal medical officers of the hospital, physicians and surgeons, form part of the surveying officers on all such occasions.

epistolary correspondence or personal application; and I embrace this opportunity to acknowledge publicly the very liberal and polite attention paid to my letters by gentlemen to whom I am personally unknown, answers having been returned to all, excepting from Edinburgh, which will be found conclusive on the subject under discussion, as far as the testimony of gentlemen of the highest professional character can vouch to the fact; and indeed, I presume the general result of this inquiry will now be deemed to have been satisfactorily established.

I shall, therefore, without farther comment, briefly lay before the Society the substance of the different communications received on the occasion.

Dr. Armstrong, physician to the Public Dispensary at Sunderland for nearly twelve years, says that he does *not* recollect having been *once* consulted by any seafaring person affected with Calculus, and that certainly *no operation* for the stone had been performed there during the above period*.

Dr. M'Leod, physician to the Westminster General Dispensary, visited Aberdeen during the last summer, and he informs me, that in the last five years *ten* operations for the stone had taken place at that institution, but that none of the patients were mariners or seafaring people. Notwithstanding the fact, he observes, that Aberdeen is the principal port in the north of Scotland, and the proportion of seafaring people admitted into the hospital consequently large, he cannot call to mind a single instance of a patient labouring under Calculus being admitted during the whole period of his previous attendance as pupil at that institution.

Dr. Ramsay, physician to the Newcastle-upon-Tyne Infirmary, acquaints me, that no record of the occupation of patients has hitherto been kept by the surgeons; that *twenty-one* male cases of Urinary Calculi had been admitted during the last *ten* years, and the surgeons of this establishment state, that to the best of their recollection *not one* of the description of persons under consideration had formed the subject of operation.

From the last annual report of the Newcastle Infirmary, with

* Dr. Armstrong is now physician to the Fever Institution in London, and the author of several valuable medical works.

which I have been favoured, and which now lies before me, it appears that the admission of patients from the 1st of April 1817 to the 31st of March 1818 inclusive, is as follows, viz. in-patients 778, out-patients 636, total 1414.

Dr. Bostock has had the politeness to procure for me the following information from a professional friend on the spot, namely, that the total number of annual admissions into the Liverpool Infirmary has been upon the average for the last *ten years* 1884, that is, 1033 in-patients and 851 out. The number operated upon for the stone in that institution during the above term of years, is stated to be *eight*, and that *none* were of the seafaring class. This fact is very remarkable: that in one of the first commercial cities in the world, no instance had occurred in the space of ten years of a seaman being admitted into the hospital for a calculous complaint; which circumstance *alone* fully demonstrates the *infrequency* of the disease among that class of men.

Dr. Rigby, now physician to the Norwich Hospital, noted for receiving a greater number of calculous cases than any hospital in Europe, acquaints me, that he has been connected with this celebrated institution ever since its first establishment in the year 1772, during which time he witnessed most of the operations performed therein, and that out of between *five and six hundred stone cases*, he cannot recollect a *single instance of a mariner having been the subject of lithotomy*. Mr. Hardy, the apothecary, who has resided many years in the hospital, makes the same remark; but he also observes, that the employment or particular occupation of the men admitted, has not been noted in the books. The doctor mentions, however, that he recollects a sailor having been operated upon many years ago by Mr. Lynn in the Westminster Hospital, which, it may be presumed, was about the period of his settling at Norwich. If then the Doctor could so accurately call to mind a solitary case after such a lapse of years, the probability is, that had any similar circumstance or event occurred at the institution where he had so long presided, and where also, I believe, he performed the duties of surgeon, he could hardly fail of recollecting it.

The local position of Norwich, its contiguity to Yarmouth

and other seaport towns on the coast of Norfolk, Suffolk, and Lincolnshire, joined to the celebrity acquired by its surgeons for dexterity and success in operations of lithotomy, the necessary result of constant practice; from these combined circumstances, Norwich seems to be well adapted for, and to court the admission of seamen into its hospital; and yet there is no recollection of any patients of the description under consideration having been subjected to the operation of lithotomy; a still farther and striking corroboration of the infrequency of calculous diseases among seamen.

Mr. Baynton, formerly of Bristol, but now of Clifton, writes me as follows*: “I received the earlier part of my education at the Bristol infirmary, between thirty and forty years since, and at that time resided seven years in the house: I very distinctly recollect that *no sailor was ever cut* for the stone during the period of my residence there; and I am equally certain that no sailor has ever applied to me for the relief of that disease since I have been in the profession. These facts would, perhaps, be of little value to you if they were to stand alone; but as they are accompanied by the very interesting communication of my friend Mr. Smyth, one of the surgeons of the Bristol Infirmary, I hope that the information will assist, &c.”

Extract of Mr. Smyth's letter to Thos. Baynton, Esq.

“My dear sir,—It being my intention to publish a memoir on the subject of Calculus, I have taken some pains, and therefore the following may be considered as accurate.

“The Bristol Infirmary has now been established eighty-three years, during the whole of which period there *is no stone case marked ‘Mariner,’* which it *would* have been, had a sailor applied to the recommender. There has been no seafaring man cut within my remembrance, which amounts to thirty-one years, and your own recollections will carry you ten years above that. Between us, therefore, we may answer for *forty years*.

“Our stone cases have declined in number very remarkably

* This gentleman is well known to the profession by his valuable publications.

of late years, which is the circumstance that first turned my attention to the subject.

		Number of patients cut for the stone			
From the year 1735	to 1740	.	.	.	16
1740	1750	.	.	.	61
1750	1760	.	.	.	83
1760	1770	.	.	.	62
1770	1780	.	.	.	40
1780	1790	.	.	.	36
1790	1800	.	.	.	32
1800	1810	.	.	.	16
1810	1818	.	.	.	10

“From 1750 to 1760, there passed the books as in and out-patients 29,604, and during the last ten years there are probably about 31,000*.

“The cases of lithotomy have come to us comparatively in the following order of frequency, as to the city and neighbouring counties:

“Bristol,
Somersetshire, Bath included,
Wiltshire,
Gloucestershire,
South Wales,
Devonshire.

“No cases from north Wales or Herefordshire.”

In addition to the mass of information already adduced, I felt particularly desirous to acquire some knowledge on the subject from Ireland, that no possible source might be left unexplored that could enlighten, or tend to remove doubts on the decision of the question. My friend and neighbour Dr. Boyton, therefore, obligingly endeavoured to supply the wished-for intelligence; but unfortunately he proved unsuccessful, the desired information not being attainable.

* In the 29,640 admissions from 1750 to 1760, the number of stone cases is stated to be 83, which gives *one* in 356; and from the 31,000 admissions during the last ten years, we must deduct two-tenths—the ten stone cases that occurred within the last eight years, we shall then give *one* in 2480: average of the two periods *one* in 585.

Bearing in mind, however, the experiments of Dr. Wollaston, as stated at page 308, I availed myself of the opportunity afforded by meeting last summer one of the professors of the Dublin College, to enquire whether Urinary Calculi were equally prevalent in the sister island as in England; for it is well known that the peasantry of Ireland are seldom able to indulge in the luxury of animal food; and his reply was, that in his opinion, the disease was much less frequent there than in England. Should the aforesaid information prove to be justly founded, the analogy suggested as probably subsisting between carnivorous birds and human subjects, as far as regards the generation of lithic acid, may be considered as pretty well established.

Spring Gardens, Nov. 16, 1818.

Some Observations on one species of Nævus Maternus; with the case of an Infant where the Carotid Artery was tied.
BY JAMES WARDROP, ESQ. F. R. S. ED.

[From the Medico-Chirurgical Transactions, Volume IX.—Part I.]

THE structures of the different tumours which have been classed under the general name of Nævi Materni, have not yet been satisfactorily described. Perhaps the subsequent observations may assist in elucidating the structure of one species of the disease; and the case which I have related, where the Carotid artery was tied, may throw some light on the treatment of such tumours.

The Aneurism by Anastomosis has been accurately described by Mr. John Bell, and its character distinctly established. There is another tumour frequently confounded with it, which is entirely confined to the skin, and to which the term Nævus has been usually applied. This form of the disease may with propriety be denominated the *Cuticular Nævus* in order to distinguish it from the others. But the tumour which is the subject of the present observations, and which has seldom been discriminated from the other two, is formed underneath the skin, being situated in the cellular membrane,

between it and the subjacent muscles. From being formed underneath the skin, I shall denominate this species of tumour the *Subcutaneous Nævus*.*

I. *History of the disease.*

The Subcutaneous like the Cuticular Nævus is always congenital, and there is no part of the body where such tumours are not met with; though they are most frequently formed about the face.

The limits of the Subcutaneous Nævus can always be accurately determined by the touch; its form is usually flattened; and it is very moveable, lying loose upon the muscles, and not adhering to the skin until it arrives at its advanced stage. The skin covering this species of tumour retains its natural colour until the swelling becomes prominent, when the large vessels shine through, giving the diseased mass more or less of a purple hue.

When the Subcutaneous Nævus is small, it has a doughy and inelastic feel, resembling that of a spermatocele, and seems to have little sensibility.

The bulk of this tumour may be greatly diminished by squeezing it, and it becomes more distended when the child cries or is irritated.

Unlike the anastomosing aneurism, the Subcutaneous Nævus is not attended with distinct pulsation, but there is an universal throbbing which can be felt more distinctly on squeezing it.

When the bulk of the tumour is considerable, the blood-vessels which pass into it are usually of a very large size, rendering the removal of such a tumor by the knife extremely dangerous.

The progress and termination of this disease are various. Sometimes the tumour is very small, and never increases in bulk. Sometimes, like the Cuticular Nævus, it has been ob-

* It may be proper to take notice of the confusion that has arisen among French and English writers in the acceptation of the term *Fungus Hæmatodes*: the French having applied the name *Fungus Hæmatodes* to the Nævus Maternus as well as to the Anastomosing Aneurism, these two tumours being by them considered as two species of the same disease.

served gradually to diminish in size without any obvious cause. In some cases there is a progressive increase in its bulk, and this is extremely gradual, the disease not assuming a serious aspect until the person be considerably advanced in life. In other instances, particularly if the tumour be small, a process of ulceration commences in the skin, and a greater or less portion of it, as well as of the substance of the tumour itself, ulcerates and sloughs away. This ulcerated surface is finally cicatrized; and though the edges of the original tumour may still remain, yet the progress of the disease seems to be arrested, and it undergoes no alteration in future life. But in some cases this species of tumour has a formidable appearance at birth; the skin, which has already become distended and discoloured, in a few days gives way, a hæmorrhage taking place which soon proves fatal.

II. *Appearances on dissection.*

The appearances which the Subcutaneous Nævus presents on dissection, demonstrate very satisfactorily the structure, and explain all the phenomena of the disease.

When the tumour is removed from the living body, its size is greatly diminished by the escape of the blood with which it was distended; but if it be of considerable bulk, the vessels passing into it are so large, that by throwing a coloured fluid into one or more of them, the diseased mass is distended nearly to the same size as when it was supplied with blood.

A Child was born with a very large Subcutaneous Nævus on the back part of the neck, situated over the occipital extremity of the left trapezicus and sterno-mastoid muscles. It was of the form and size of half an ordinary orange. The tumour had been daily increasing, and I saw it on the tenth day after birth, when the skin had given way and a profuse hæmorrhage had taken place. Notwithstanding the bleeding, no diminution had taken place in the size of the tumour. It felt warmer than the surrounding skin, was very soft and compressible. Squeezed in the hand it yielded like a sponge, and was reducible to one-third of its original size. In its compressed state it looked like a piece of corrugated skin, its colour being nearly that of sound integument. On removing the

hand the tumour rapidly filled, the skin again becoming purple. There was no distinct pulsation, but a violent throbbing was felt in the tumour, and arteries beating strongly passed towards it.

Conceiving the immediate extirpation of this tumour the only chance of saving the infant, I removed it as expeditiously as possible, and made the incision of the integuments beyond the boundary of the tumour; aware of the danger of hæmorrhage where such tumours are cut into. So profuse, however, was the bleeding, that though the whole mass was easily removed by a few incisions, the child expired.

The tumour having been injected by throwing coloured size into a few of the larger vessels, its intimate structure could be accurately examined.

Several of the vessels, which from the thinness of their coats appeared to be veins, were of a large size, and there was one sufficiently big to admit of a full sized bougie. This vessel is fully as large as the carotid artery of an infant. The boundaries of the tumour appeared distinct, some healthy cellular membrane surrounding it, which was traversed by the blood-vessels. On tracing these vessels to the diseased mass, they penetrated into a spongy structure composed of numerous cells and canals of a variety of forms and sizes, all of which were filled with the injection, and communicated directly with the ramifications of the vessels.

These cells and canals had a smooth and polished surface, and in some parts resembled very much the cavities of the heart, fibres crossing them in various directions like the *columnæ tendineæ*.

The opening in the skin, through which the blood had escaped during life, communicated directly with one of the large cells of the tumour, and the largest vessel passed directly into that cavity.

Several tumours of the same kind which I have dissected, exhibited a structure precisely similar that which has now been described.

III. *Treatment of the disease.*

The treatment of this kind of tumour has not usually been very successful. When the swelling has been small, I have already mentioned, that in some instances it has remained throughout life without undergoing any alteration. In other instances it has gradually been absorbed; and in some an ulcerative process has taken place which destroyed the greater part of the tumour, the remaining portion continuing unchanged or being gradually absorbed.

Pressure and cold have been recommended by Mr. Abernethy in the treatment of Nævi; and where these can be advantageously employed, they have in many instances been useful, particularly in the Cutaneous Nævus. Extirpation by the knife has been most commonly resorted to. The operation has frequently been attended with difficulty from the situation of the tumour; but more particularly from the hæmorrhage which accompanies the operation. The loss of blood has often been so great as to produce serious consequences; and in the case already detailed, so large were the vessels, that their division instantly proved fatal. It was the unfortunate result of extirpation in the case which has been detailed, and the easier mode by which the supply of blood to the tumour might be stopped, which led me to propose the practice adopted in the following case.

An infant was brought to London on account of a Subcutaneous Nævus on the left cheek, of a very unusual size. I saw it when it was six weeks old. The base of the tumour then extended from the temple to beyond the angle of the jaw, completely enveloping the cartilage of the ear. Its form was semispherical, the upper part of its surface being flattened from a large portion of the integuments having ulcerated. This ulcer was about three inches in diameter, its surface having a sloughing appearance and accompanied with a good deal of fætor.

The skin on the rest of the tumour was covered with turgid vessels, and the external jugular and angular veins were greatly distended, particularly when the infant screamed, which it generally did both during the day and night at short intervals.

The tumour was soft and doughy, and its size could be much diminished by pressure. It did not pulsate distinctly, but there was a throbbing in it, and the vessels in the neighbourhood beat strongly.

This tumour was about the bulk of a small-sized orange at birth, and had been daily increasing. The ulceration of the skin had existed twelve days, from which there had been several profuse hæmorrhages.

The infant was so extremely emaciated and feeble, that before any means for the cure of the tumour could be adopted, an attempt was made to strengthen the child by giving it at short intervals, and in small quantities, milk, beef-tea, brandy, and opium. These means had the most decided effect in restoring the vital powers, and on the following morning the infant began to suck its nurse, which it had not previously done for some time.

Though this tumour was quite moveable, and its base accurately circumscribed, yet I had learnt, from the operation in the case which has already been detailed, the danger to be dreaded from any attempt to extirpate a Subcutaneous Nævus of such a size, situated in any part of the body. It therefore appeared to me, that as the extirpation of the tumour was impracticable, two important points might be gained by tying the trunk of the common Carotid artery. One of these would be, the immediate effect in arresting the tendency to a fatal hæmorrhage; the other, the reduction of the bulk of the tumour. For as from the dissection of such swellings they appeared to be composed of numerous cavities and canals through which blood is freely circulated, it was reasonable to expect, that by stopping the circulation through the Carotid artery, the flow of blood through this tumour would be interrupted, some of the blood contained in its cavities would coagulate, whilst some might be absorbed, and the cells thus collapse or be obliterated. Besides, it was to be expected, that the sloughing process already begun in this tumour was to go on, and thus the disease to be ultimately destroyed. A process which, I have already noticed, nature sometimes employs very successfully for the removal of such tumours, and which probably might have been completed in this instance without the assis-

tance of art, had not the profuseness of the bleeding accompanying the process threatened the destruction of the child.

The temporary restoration of the child's health and strength by the cordials which had been given during twenty-four hours, afforded perhaps the only opportunity which might have occurred of performing the operation; and as the opinion of Mr. George Young and Mr. Travers, who were consulted in the case, coincided with my own, by their able assistance the operation was immediately performed.

In making the incision through the integuments it was necessary to guard against wounding some large veins. The incision was made along the tracheal edge of the sterno-mastoid muscle, and with a blunt instrument the sheath of the artery was readily exposed. By keeping apart the edges of the incision the sheath was easily slit open, the artery laid bare, and the eye of a probe armed with a small ligature passed under it. The ligature was moderately tightened with a single knot, and the lips of the wound brought together with a stitch and adhesive plaster.

The operation produced no change in the child's countenance, but in a very few hours there was a manifest alteration in the appearance of the tumour. It became soft and pliable, lost its purple colour, and the tortuous veins collapsed.

On the *second* day after the operation, a very remarkable change had taken place in the bulk of the swelling, and the skin covering it had resumed its natural pale colour. The ulceration continued to extend, accompanied with a good deal of fætor; but the child continued to support its strength. The balsam of Peru was now applied with pledgets of lint to the surface of the ulcer, and it had the immediate effect of stopping the process of sloughing and of destroying the fætor.

On the following day the bulk of the tumour continued to diminish; the child was entirely nourished by sucking, and its lips had become florid. There was no swelling or redness of the wound.

On the *fourth* day after the operation, the tumour had considerably increased in bulk, the integuments covering it had become livid, and the adjacent veins turgid. The inosculating branches of the temporal and occipital arteries had greatly in-

creased in size, having become tortuous and very vigorous in their action. On the right side the pulsation of these vessels was strong; but on the left, the side where the tumour was situated, they were much more feeble. A very small quantity of blood had oozed out from the ulcer, and there was a slight fœtor.

After remaining without much alteration, on the *seventh* day the tumour had again evidently diminished both in bulk and in the vigour of pulsation in the arteries. The infant appeared easy, and its general health continued good.

On the *ninth* day the child slept longer than it had done since its birth. The ulceration continued to go on slowly, and the dried crust which was formed in the centre of the ulcer, and which had been considerably elevated, now appeared depressed from the process of absorption going on underneath. The bulk of the tumour had now diminished fully one half.

On the *twelfth* day, it was observed that the child's countenance had been daily improving, and the body, though much emaciated, had the appearance of health; the skin was moist and mottled, the lips red, the bowels regular, and it continued to suck eagerly, getting no other nourishment. The surrounding vessels had become much less turgid, and the skin covering the tumour, as well as that of the ear, had acquired its natural colour. The auricular portion of the swelling had so much diminished, that the cartilage of the ear, which at one time was elevated by the tumour, had nearly fallen into its natural situation. Part of the ulcer, which had rather a granulating appearance, now looked sloughy. A common poultice having been applied for two days, the central portion of the tumour, which appeared like a mass of hardened blood, was softened, and I removed considerable portions of it. It cut like liver, and when washed in water it exhibited a spongy structure. It seemed as if, from tying the carotid artery, the circulation of blood through this portion of the tumour had been arrested, and that which filled the cells had coagulated. The more rapid decay of this than the anterior portion of the tumour, probably arose from the latter being readily supplied with blood by the anastomosing branches of the submental, labial, and other arteries.

On the *thirteenth* day the child became suddenly weaker, refused to suck, and notwithstanding the use of brandy and opium in repeated small quantities, it rapidly sunk, and died on the *fourteenth* day after the operation, exhausted by the irritation of an ulcer which had now involved the whole surface of an enormous tumour.

On reviewing the history and treatment of the two cases of Subcutaneous Nævus which have been detailed at some length, the treatment which I have employed in others, together with the structure of the tumour, it appears to me that some general rules may be given for the management of this species of tumour under all the varieties of size, form, and situation which it may assume.

Tumours of this description may be removed by the knife, by ulceration, by absorption, by tying the vascular trunks supplying them, and by ligature; these different means being employed singly or combined as may appear best adapted to the individual case.

When the tumour is small, or even of a moderate size, there is no part of the body from which it may not be with safety removed by the knife. The only circumstance which requires particular attention in performing such an operation is, to avoid cutting into the substance of the tumour; for if this be done, the hæmorrhage is violent; whereas, by making the incisions beyond the diseased structure, the flow of blood is much more moderate, and so completely ceases after the tumour is extirpated, that I have never found it necessary to tie any vessels with a ligature.

Instead of removing the Subcutaneous Nævus by the knife, I have in a few cases imitated the ulcerative process already mentioned, as sometimes coming on spontaneously. I was first led to adopt this practice, from having observed, many years ago, the effect of a strong solution of the corrosive sublimate applied to a Subcutaneous Nævus on a child's back. In this instance, the skin ulcerated and the ulcer spread rapidly, destroying not only the integuments, but the substance of the

tumour. In cases where the knife cannot be with safety used, this mode of treatment may be advantageously employed, and it may in some cases be preferred even where the extirpation of the tumour is practicable.

When a Subcutaneous Nævus is to be removed by ulceration, the process may easily be commenced by destroying a central portion of the skin with lunar caustic or kali; and when the ulceration is once begun, it goes on rapidly until the whole mass is destroyed, merely a discoloured edge being left. Should at any time the ulceration advance too rapidly, and the sore begin to slough, as frequently happens, that process may be powerfully controlled by the application of the balsam of Peru to the surface of the sore; an application which has very successfully been employed in the East Indies in sloughing ulcers, and from which I have in similar cases derived the most decided benefit.*

But there are cases of Subcutaneous Nævus so formidable from their size and situation, that the extirpation of the tumour is impracticable; and where the hæmorrhage accompanying the ulcerative process, when such takes place, is still more dangerous. The two cases which have been narrated illustrate this observation. It is in such tumours where I would advise tying the trunk or trunks of the arteries which supply the tumour. From the result of tying the Carotid artery in the Subcutaneous Nævus on the cheek, and the effects of tying the same vessel where there was an Aneurism by Anastomosis in the orbit†, important advantages are to be expected from the operation:—these are, the diminution of the bulk of the tumour by cutting off its supply of blood; the danger from hæmorrhage being diminished, should the ulcerative process have commenced; and the rendering it practicable to remove such a tumour by the knife, the extirpation of which was previously extremely dangerous or even impracticable.

When the supply of blood to the tumour is arrested, an immediate diminution of its bulk will take place; and whether the ulcerative process or extirpation is to be had recourse to for its ultimate destruction, the size may still be further dimi-

* Asiatic Journal. † See Mr. Travers's Case in Vol. II.

nished by forcibly squeezing out its contents, and afterwards making use of compression by adhesive plasters and bandages.

We are not yet entitled from experience to lay down any rule for deciding, whether extirpation or the ulcerative process should be preferred for the removal of such tumours. It is very probable that a child's health would be less disturbed by extirpating a large tumour of this kind with the knife, than destroying it by the more tedious process of ulceration.

How far it may be advisable in some cases to remove large Subcutaneous Nævi by ligature, I cannot from experience decide. Mr. White informed me, that he thrust a needle through the middle of a very large Subcutaneous Nævus on a child's shoulder, and included each half of the swelling within the noose of a ligature. The operation was attended with complete success.

Case of Aneurism by Anastomosis of the Finger.

Whilst considering the treatment of the Subcutaneous Nævus, it may not be out of place here to relate a case, where an ingenious mode of treatment was employed by Mr. Lawrence for the cure of an Aneurism by Anastomosis.

"A woman, twenty-one years old, has been for the last three or four years under the care, first of Mr. Hodgson, and subsequently of myself, for a pulsating tumour of the finger, of the description which has been called Aneurism by Anastomosis. She does not remember its commencement, but rather supposes that it had existed from the time of birth: it increased in size, and began to be troublesome about four years ago.

"The complaint occupied the ring finger of the right hand: there was a general fulness of the first phalanx, but the chief swelling was on the palmar surface and ulnar side of the finger, the circumference of which may probably have exceeded the natural dimensions by one third. The swelling was soft and compressible; the vessels composing it were obscurely discernible through the skin, and gave it a slight reddish or livid tint. There was a sensation of heat in it; and it was rather warm to the touch. It pulsated strongly, just like an aneurism. The digital artery of the corresponding side was very large, and conspicuous by its size and strong pulsation in the palm of the

hand. The veins at the back of the finger, hand, and fore-arm were turgid; and the integuments of the hand, on its dorsal surface, marked by a line of discoloration exactly like that which remains after a bruise. There were painful sensations in the part, extending successively to the hand, fore-arm, arm, and breast: these were so much aggravated by any exertion, that the whole limb was rendered useless for any offices that required a continued effort, however slight.

“ Having ascertained that the beating could be stopped entirely by pressing on the radial and ulnar arteries at the same time, but not having been able to satisfy himself that compression of the enlarged digital artery produced this effect, and having tried ineffectually for several months compression and other external means, Mr. Hodgson tied both the trunks first mentioned in January 1815. The consequences of the operation were, an entire cessation of the beating, collapse of the swelling and relief from pain: but these symptoms all recurred in a few days, and were just as bad as before.

“ Compression was again unavailing. The pains, which now reached to the shoulder and chest, not only prevented her entirely from following her former occupation of needlework, and rendered the limb useless for most of her ordinary occasions, but greatly disturbed her rest, and made her very desirous of trying some means of relief. When she consulted me, after my friend Mr. Hodgson had left town, I informed her that the amputation of the finger at the metacarpal joint was the only effectual proceeding I could propose; but she immediately and decidedly rejected all idea of such a mutilation. The only other plan that occurred to me was that of dividing all the soft parts by a circular incision close to the palm so as to cut off the supply of blood; and to this her sufferings induced her to submit, although it was represented to her as a painful operation, and of rather uncertain effect.

“ Assisted by Mr. George Young and Mr. Samuel Cooper, who had sanctioned the proceeding by their approval, I made a circular cut through all the soft parts, excepting the flexor tendons with their theca, and the extensor tendon. The digital artery, which had pulsated so evidently in the palm of the hand, was fully equal in size to the radial or ulnar of an adult,

and was the principal nutrient vessel of the disease. After tying this and the opposite one, we were much surprised at finding so strong a jet of arterial blood from the other orifices of these two vessels as to render ligatures necessary. This occurrence, however, dissipated any apprehensions that might have been entertained respecting the subsequent supply of the finger. The edges of the incision were brought together by four sutures, but could not be very satisfactorily united, in consequence of the tumour, and indeed the whole finger beyond the cut swelling very considerably. It seemed as if the diseased vessels were distended with blood, which could not be carried back by the veins; for large vascular trunks, turgid with blood, were conspicuous through the skin, which had a deep red and nearly livid colour.

“ The wound of the incision healed slowly; the swelling subsided, but did not entirely disappear; and the integuments recovered their natural colour. The pulsation and the pain were put an end to.

“ At the present time, there is still a fulness of the part, but without any beating, and some minute red vessels are visible in the skin, like those which are sometimes observed ramifying in the integuments of the face. The venous distention and general pain of the limb are gone, and the natural powers of the part are so far recovered that she can work at her needle for an hour together, and use the arm for most purposes.”

December, 1817.

On the Acetometer. BY JOHN and PHILIP TAYLOR.

[From the Journal of Science and the Arts, No. XII.]

THE uses of acetic acid have been considerably enlarged in this country within a few years by the introduction of some important articles of manufacture, and by the more extended application of some of its compounds to the arts of dyeing and calico printing. Of the former, it may be sufficient to notice the introduction into this country of the manufacture of a very important article of commerce, sugar of lead, which was most successfully done some time since by Charles Macintosh, Esq. of Glasgow, and which has been followed by a general adoption in many parts of the United Kingdom, so

as to supply not only the home, but the export trade, with a substance of extensive demand, heretofore only produced in Holland. This has been followed by a manufacture hitherto peculiar to the French, and for which they were supposed to possess superior facilities—that of verdigris, which is now made in England, so similar in quality to the foreign article, as to leave little room for improvements.

These new uses for acetic acid, together with the increasing demands of the calico printer, to whom the acetate of alumine as a mordant, and the acetate of iron as the base of many colours are essential, was likely to produce exertions to obtain the acid in the most economical manner. Some of these purposes required it but of very impure quality, and the acid obtained by the distillation of wood, was readily applied to them without much care or expense in its preparation, and in this state was found to be sufficiently cheap.

The manufacture of sugar of lead, white lead, and verdigris, by the use of pyroligneous acid, however, required a degree of purification from the tar and peculiar oil with which it is charged in its crude state, that exercised the ingenuity of many of the most skilful manufacturing chemists of this and other countries; and though in England the attempts seem to have been for a considerable time for the most part limited to that degree which its use in manufacture required, yet in France it became an object, which was in great measure attained, to produce it in so pure a state as to fit it for the uses of the table.

In England and in Scotland the same attempt was induced two or three years ago, by the failure in demand of the articles which had given rise to several important establishments, and vinegars prepared from the pyroligneous acid began to find their way into the market, of various shades of purity, and of very different degrees of strength.

Vinegar produced by fermentation, is naturally limited as to the concentration of its acid; and the convenience of commerce has introduced considerable uniformity in this respect. In the purified acid from wood, however, no such limit exists, and as the process by which it is freed from the substances with which it is originally mixed, require that it be first com-

bined with some base, and subsequently separated again by decomposing the compound, it is evident that it may be produced in a great variety of degrees of concentration.

In the application of acetic acid to the purposes of manufacture or the arts, a ready and practicable mode of measuring its strength soon became a very desirable object, and those who employed it had recourse to different means, principally grounded either on its saturation by alkalies, or on the solvent power exerted on some proper substance. As these produced varying results from the unequal skill of the operator, from the difference in the saturating substances, and from the time and circumstances required for the processes, no common standard was to be found, and considerable difficulties occurred in adjusting the question of strength, when acetic acid was passed from one hand to another in the ordinary transactions of business.

We had, in common with other manufacturers, often felt this inconvenience, and being then concerned in an establishment where pyroligneous acid was largely produced and applied, had given considerable attention to the best modes of measuring its strength in various degrees of purity.

When it came into use in competition with common vinegar, the revenue laws which regulate the duty on this article were found defective, inasmuch as they considered it of uniform quality, and attached an equal duty to a given measure, without providing for a difference in strength, which, in some cases, went so far as to exhibit a pure acetic acid of eight times the power of common vinegar. The law was therefore judiciously altered, and the attention of chemists was directed to the subject.

Among others, we were called upon to contribute whatever our experience might furnish, to render the mode of ascertaining strengths certain and easy of execution to an unpractised operator.

We assumed, as a very desirable object for this purpose, that it should be accomplished in some manner that might be similar to those in use among revenue officers, and by some instrument which might be easy to understand and use; and we directed our attention to finding some plan by which the

real quantity of acid might be readily and accurately determined by instruments similar to those which are used for trying spirits, &c.

The difference of specific gravity in acetic acids of various strengths, when pure, is however too small to afford any correct indication, and is also embarrassed by the different proportions of mucilage or saccharine matter in those produced by fermentation. The strength of vinegar in different states of concentration cannot be determined with the same facility, or by the same means as are employed for spirit or the mineral acids; the specific gravities of these latter substances diminish or increase in the ratio of their strengths, by quantities sufficiently great to allow of the formation of an accurate hydrometer for their measurement. This, however, is not the case with acetic acid, the total amount of difference in gravity between the strongest and the weakest being comparatively small, at the same time that many circumstances tend to render this a fallacious guide.

Common vinegar, for instance, indicates a specific gravity of 1025, of which a certain proportion is owing to mucilage &c.; as pure acetic acid of equivalent strength gives only a specific gravity of 1008.5, and pure acetic acid 13 times as strong has only a gravity of 1072. Comparing these with the gravities of sulphuric acid of equal saturating power as common vinegar, and of an acetic acid 13 times as strong, we shall find the difference to be as 1033 is to 1660 = 627 instead of

$$1008.5 - 1072 = 43.5$$

and as vinegar is often a mixed fluid, containing mucilage, extractive matter and spirit, it may indicate a high gravity without being strong, or it may have considerable strength without being heavy.

We proposed therefore to construct an instrument to measure *an acquired specific gravity*, and which should be uniformly as the strength of the acid. For this purpose, it was necessary to furnish a substance for previous combination, which should unite with the acid rapidly to complete saturation, and of which the addition in excess should produce no inconvenience. We knew that hydrate of lime possessed these qualities, and that it was well qualified for the purpose, by the uniform state

in which, with sufficient care, it may at all times be prepared and kept. It was only necessary to determine by careful experiments, the relative increments in gravity acquired by the saturation of acetic acid, of known strength, by this substance, and to accommodate to them an instrument of easy application.

We proceeded to these experiments with the assistance of our friend, Mr. Richard Phillips, whose accuracy and skill in chemical research are so well known.

There is one advantage in the use of hydrate of lime for the purpose, which may be mentioned here, which is, that as it constantly precipitates in the saturation a considerable portion of the mucilage, it serves partly to get rid of that difficulty, and to render the compensation which is to be made for that mixture more uniform than it could be in an uncombined acid.

A standard strength of acetic acid was the first thing to be determined, which it was desirable should be such as was usually found in the best common vinegars made by fermentation, or such as paid the previous duty, which it was not intended to increase.

The best vinegar of this kind is called by the makers No. 24, and a variety of experiments had been made upon it by Dr. Thomson, who had found it to contain, at a mean, about 5 per cent. of real acid.

We found by several trials, that different samples of the best vinegars had some variation in this respect; but after many, and we believe, accurate experiments upon them, we thought the proportion assigned by this distinguished chemist to be a fair and proper one, and we assumed it as the standard of vinegar strength, or as it has since been denominated, that of proof acid.

We then proceeded to ascertain its power, by saturating an alkali, selecting for this purpose one which might be referred to at all times with the best chance of being always obtained in an uniform state, and taking therefore well crystallized subcarbonate of soda.

The proof acid containing 5 per cent. of real acid was

found to require 14.5 parts of subcarbonate of soda to each 100 parts of acid, for complete saturation.

These experiments were checked by corresponding ones on oil of vitriol, which has a nearly equivalent power to that of real acetic acid.

The next step was to prepare a series of pure acetic acids, of which the strengths should bear a regular proportion to that of proof acid. We prepared for this, by making a quantity of acetic acid at the highest practicable degree of concentration.

For this purpose, we made acetate of soda, by decomposing pyrolignite of lime by sulphat of soda, and very carefully purified the product by repeated solution and crystallization.

The salt thus obtained in a perfectly white state was dried, and fused in an iron pot until all the water of crystallization was driven off, and it was reduced by the application of considerable heat to a dry powder. This was decomposed in glass retorts by concentrated oil of vitriol, and the acetic acid distilled over. It contained, as usual, a mixture of sulphureous acid, which was separated by adding sugar of lead, and submitting it to another distillation.

To obtain a sufficient quantity this process was repeated three or four times, and in one of them, which did not differ in any essential particular from the others, we were agreeably surprised to find the acid, after standing all night in a low temperature, to have shot into very beautiful crystals of a tabular form, presenting the very rare substance of acetic acid in its glacial state. The crystals, when separated from the liquor in which they formed, and being dissolved, gave no trace of sulphureous acid by the addition of sugar of lead, which it seems to have excluded in crystallizing, as it was found as usual in the remaining uncrystallized part.

When the whole of the strong acid was rectified and put together, its strength was carefully ascertained by saturation with subcarbonate of soda, and was found to be 13.1 times as strong as proof acid, or to contain 65.5 per cent. of real acid.

The glacial acetic acid, which is probably the purest and most concentrated form of which it is susceptible, by the same trials, exhibited a strength 16.6 times greater than proof acid, and contained 83 per cent. of real acid.

From our stock of strong acetic acid, we prepared by dilution a regular series, as compared with proof acid, and each was carefully tried and adjusted by numerous experiments with the alkali, so that all might be depended upon as correct.

As we had found that the stronger samples when saturated with lime would not give a solution sufficiently fluid for a correct determination of its specific gravity, we resolved upon the constant use of an equal bulk of water to dilute each sample of acid to be tried, and this method is adopted with the instrument; as though it may be unnecessary for the weaker acids, yet it is better to do it in all cases, and have a uniform scale of computation, than to risk errors by a variation of the process, and a twofold mode of calculating.

In this way, we found the solutions of lime in a fit state to determine their specific gravity up to 8 times the strength of proof acid, containing therefore 40 per cent. real acid; or, in the language of the revenue, 35 per cent. over proof; and the acetometer now in use goes no higher than this point, which includes all that is likely to be made for common purposes, and a provision for laying the duties on greater strengths is made after another manner.

The following is the series of acids, which were prepared, with the simple specific gravities of each.

Proof acid the same strength as best	} Specific	
No. 24. vinegar,		gravity 1008.5
Twice the strength of proof,	-	- 1017.
Three times ditto,	-	- 1025.7
Four times ditto,	-	- 1032.
Six times ditto,	-	- 1047.
Eight times ditto,	-	- 1058.

These and other intermediate samples were saturated with hydrate of lime, and the specific gravities carefully taken, upon which were grounded the adjustments of the weights of the instrument, various trials were made to compare results, and satisfactory conclusions obtained in this respect.

The increments of gravity were found not to be in a regular series, and a provision had to be made to accommodate the instrument to the variation.

In vinegar which contains mucilage an allowance was

required for the increase of weight from this cause; and as it is clearly impossible to adopt any which should meet all the minute variations in this respect, experiments were undertaken to ascertain whether something of a mean might not be assumed, which should be a sufficiently near approximation for all practical purposes; this seemed to be the case, and it was provided for by adding a weight to be used with the others on the instrument for trying acids, which had not been purified by distillation.

The preceding is an outline of the principle on which the acetometer invented and made for the Revenue is constructed, and the mode in which the adjustment has been settled. The Honourable Board of Commissioners of the Excise directed that numerous trials should be made as to its practical utility, and have ordered its adoption by their officers, for the purposes for which it was intended.

It may be probably very useful to those who employ or purchase vinegars and acetic acid; and we may hereafter, if it be worthy a place in the Journal, offer a description of the instrument and its application.

JOHN and PHILIP TAYLOR.

10 Bury Court, St. Mary Axe,
7th December, 1818.

Further account of the result of an operation for forming an Artificial Pupil. Extracted from Letters addressed to PROFESSOR SCARPA. By J. P. MAUNOIR, Professor of Surgery at Geneva.

[From the Medico-Chirurgical Transactions, Vol. IX. Part II.]

“SINCE I communicated to you the result of the operation, performed on the eyes of the Marquis de Beaumanoir, they have undergone some remarkable alterations; of which the following notes copied from my memorandum-book may give you some idea.

“Jan. 24, 1816.—That portion of the crystalline of the right eye which adhered to the new pupil has disappeared. The centre of the opening in the iris of the clear dark colour: it is

obscured in different parts of its circumference by a sort of veil resembling a thin gauze. Contrary to my expectation, and in consequence of the motion of the globe of the eye, I discovered an opaque portion of the crystalline about the size of a grain of millet seed, immediately before the pupil. It was independent and moveable, and disappeared after a few minutes. On the marquis's looking down or stooping, it showed itself as before, and again disappeared when he turned his eyes upwards, or held back his head. The progress, in point of transparency, of the pupil, has had little effect on the sight: the retina is weak: the moving of the abovementioned substance in the humours of the eye, must disorder the sight. I trust it will soon be absorbed.

"Feb. 3.—The extraneous body has disappeared. The sight is undoubtedly improved.

"Since that period the progress has been rapid. In the latter end of February he could distinguish with his right eye, aided by a convex glass, capital letters of half an inch long. He can now, with the same assistance, read common writing in characters of an ordinary size. With his left eye, and by taking much pains, he reads a sentence in a common octavo. In his walks he sees the horizon around him, distinguishes objects, and tries to draw landscapes from nature, very imperfectly, as may be supposed. Though he sees with tolerable distinctness any object in the direction of the horizon, he no sooner stoops than every thing becomes obscure.

The gauze-like veil still exists in the pupil of the right eye. In the inferior part is seen a small immoveable fragment of crystalline; probably the same which was perceived rolling in the eye on the 24th of January."

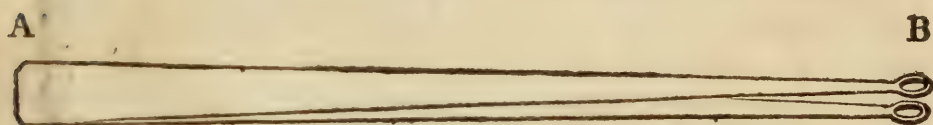
Some months after sending the above account to Professor Scarpa, I sent him also the following.

"The marquis de Beaumanoir's left eye had a pupil of a very fine black: that of the right eye had still in its centre something like a thin spider's web. The moveable portion of the crystalline was now become fixed in the lowest part of the pupil.

"The marquis wished for a second operation which might

destroy what he considered the chief remaining obstacle to perfect vision. I performed it in the following manner.

“ The cataract knife of Richter was plunged, not in the direction of the tangent, but perpendicularly to the circumference of the cornea, into the external and inferior part of that membrane, so that the point penetrated into the middle of the new pupil. This simple puncture produced an incision of about two lines in length, into which I introduced pincers similar in shape to common polypus-pincers, of a very small size. The two extremities are like an open spoon; its length nearly that of A to B.



“ With this instrument I endeavoured to seize the fragment of the crystalline, but at the first attempt it disappeared altogether in the bottom of the eye. I succeeded better with the veil resembling a cobweb. The spoons of my pincers were filled with it, and I brought out a sort of opake jelly. I next introduced my double-button-scissors, and made an easy incision in the iris, so as to enlarge the pupil near the centre of the eye. The whole went on quickly, and without the patient's showing any signs of pain.

“ After this operation, the eye healed in a very short time, no accident having retarded its cure: the sight appeared to be daily gaining ground. Since that time, the marquis has been to St. Gervais, at the foot of the Alps, for the benefit of the waters, where he took several sketches from nature, which are interesting, not only from the singular circumstances of his case, but from their real merit. Still he cannot see what is on the ground immediately below him, nor distinguish objects clearly without his convex glasses.”

“ Since the above was written, I have received several letters from the marquis de Beaumanoir. He had been to Nice, where he found great benefit from sea-bathing. He mentions with delight the wonderful progress of his cure. He can read, even by candle-light, the smallest printed and written charac-

ters. The drawings he sent me (still sketches from nature) are coloured, and have acquired great neatness. In a word, he sees as well as after the most successful simple operation of the cataract, since he assures me (in a letter from Lintz), that he cannot remember ever to have had a more perfect sight; that he pursues his occupations with the greatest ease, and is so independent as to walk in the streets alone at night without a guide."

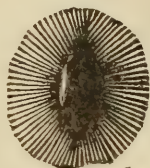
"As I am of opinion that it is desirable to employ the buttoned scissors, in all cases of cataract, where there is a complication of the immobility of the iris, and its adherence to the opake capsula of the crystalline, I shall terminate this memoir with an account of the following operation.

"Dr. Carron, of Annecy, sent me, in the month of June, 1816, a young woman of about 26 years of age, whose right eye was affected with an opacity of the lens, and a complicated atrophy of the globe; there was also a cataract on the left eye; but with that she could distinguish light from darkness. The pupil was very small, incapable of performing the least movement, and evidently adherent in its circumference to the opake capsule of the crystalline, so that the iris and the capsula formed one continued membrane. She was operated upon in the following manner.

"I made an incision in the cornea, rather smaller than if it had been for extraction. Then with the pointed blade of my pupil scissors, I penetrated the iris at its inferior part, at the distance of a line from the circumference. I brought the blade in a vertical direction, as far as behind the crystalline: and when it arrived near the superior part, I shut my scissors, and thus cut the crystalline, its capsule, and the iris itself, in the direction of its axis or vertical diameter.

The pupil immediately became larger. The two segments of the capsule were separated, and showed a broken crystalline of a bluish grey (that of the capsule was of a yellow-white). It became very easy to extract the crystalline, piece by piece, with a small scoop; and I then took out with the pincers the largest segment of the opake capsule where it adhered slightly to the iris. The pupil, rendered larger by the double section of the

iris, remained, after the operation, of a very good size, and in the form of a weaver's shuttle. In consequence of which, I abandoned the idea of extracting the other fragment of the capsule, as the taking it away would have made the pupil too large. The following figure represents the eye immediately after the operation and since its cure.



An Account of the Progress of Knowledge respecting Materia Medica, from June 1818, to January 1819.

“Non enim quidlibet ægris inculcasse; sed cogitasse quid maxime conveniret, et id usu explorasse, quod ante conjectura aliqua dicissent. CELSUS, lib. i.

[From the London Medical and Physical Journal, for February, 1819.]

PREVIOUSLY to a detail of the subjects we have to treat of in a particular manner, it may be proper to notice in general terms the various systematic works that have recently appeared on *Materia Medica*; of which the most important is the *Paris Pharmacopœia*.* Of this we must speak in terms of warm approbation. The general arrangement of the matter is perspicuous and judicious; the language concise and accurate; and the whole highly creditable to M. HALLE, who superintended the composition.

One of the principles which influenced the labours of the authors is particularly deserving of praise; which they express by observing—“*Perspicere præstantius certè est, quam despicere:*” This relates to those formulæ which have been long established, and kept prepared by apothecaries, with the properties of which the public suppose themselves to be acquainted, and, consequently, are in the habit of employing without having recourse to professional advice.

* *Codex Medicamentarius, sive Pharmacopœia Gallica*; editus a Facultate Medica Parisiensi, anno 1818. 4to. pp. 393; apud Hacquart.

Professor SALVA has published on account of the *materia medica* employed by him in his practice at the royal Médical School at Barcelona*; which we notice, because of the judicious manner in which he has arranged and described the matters of which it treats.

The history of each medicine is divided into six paragraphs: the first indicates the name given to the substance by Linnæus, and the work in which it has been treated of by that naturalist; the second describes its physical properties; the third, its chemical qualities; the fourth, its most evident and general medical properties; the fifth treats of its curative property, which is the necessary result of the action of the preceding one: this last paragraph has often been left blank, in consequence of the obscurity in which the consecutive effects of medicine are still enveloped. The same reason induced him to arrange them alphabetically, rather than by any systematical classification. The sixth paragraph indicates the mode of using the remedy. Neither in the number of the medicinal substances employed, nor in the composition of the formulæ which he described, can Prof. Salva be said to be subject to the censure for too great multiplicity and complexity, which had been passed on many productions of this kind: on the contrary, we find many remedies which we consider as highly useful for their variety, and essentially necessary for their properties, not employed by him; such as arsenic, belladonna, colocynth, digitalis, gentian, scammony, &c.

An amplified and corrected edition of the *system of Materia Medica* of SCHWILGUE, by the late M. NYSTEN, has also recently appeared. The merit of this work is so well known and generally acknowledged, that any observations on our part are unnecessary.

A new and improved edition of the excellent pharmaceutic work of Dr. CADET DE GASSICOURT, with notes by Dr. PARISET, has also been lately produced.

The physicians of the United States are very actively engaged in the investigation of the medicinal qualities of the plants

* *Tercer ano Médico-Clinico de la real Escuela de Medicina Practica de Barcelona*, 4to. 1818.

produced on that part of the globe; several of which are indigenous to it, and highly estimable in the practice of medicine. The most important works on this subject now in the course of publication are those of Dr. BARTON* and Dr. BIGELOW:† that of the latter is particularly valuable from the great erudition of the author, and his extensive research respecting the observations that may have been made respecting the medical qualities of those plants already generally known, and from the accuracy with which the chemical analysis of them has been conducted. The work of Dr. Barton merits the highest praise for the accuracy of the botanical history, and the manner in which the representations of the plants are executed. We need not notice these works more at length on the present occasion, having already inserted in our Journal some extracts from them, which we shall repeat from time to time, respecting such plants as are known, or appear to be worthy of being brought into use, in Europe.

A new edition of the dispensatory of Mr. THOMPSON has also lately appeared,‡ which embraces every thing of most importance relative to pharmacy, &c. up to the period of its publication.

We have also to notice a work on the same subject,§ by Mr. GRAY. This is chiefly adapted to the use of the chemists of the present period, who have become what apothecaries were formerly.

* *Vegetable Materia Medica of the United States, or Medical Botany, &c.*; by W. P. C. Barton, M. D. Professor of Botany in the University of Pennsylvania, &c. &c.

† *American Medical Botany*; being a Collection of the native Medicinal Plants of the United States, containing their botanical History, chemical Analysis, and properties and uses in Medicine, &c.; by Jacob Bigelow, M D. Rumford Professor and Lecturer on Materia Medica and Botany in Harvard University.

‡ *The London Dispensatory*; containing the Elements of Pharmacy, the Botanical Description, Natural History, Chemical Analysis, and Medical Properties, of the Substances of the Materia Medica, &c.; by A. T. Thompson.

§ *A Supplement to the Pharmacopœias*; including not only the Drugs and Compounds which are used by professional or private Practitioners of Medicine, but also those which are sold by Chemists and Herbalists, and for other purposes; by L. F. Gray. 8vo.

As the mode of action of numerous articles of the *materia medica* is obscure, and of many of them altogether unknown,—and also from several of them producing various effects when employed under different circumstances,—we shall consider those of which we have to treat in alphabetical order, rather than according to any systematic arrangement founded on their supposed properties.

ANTIMONIUM TARTARIZATUM, has been introduced to the notice of physicians by Dr. BALFOUR, as a medicine possessed of properties not generally attributed to it. The author, in his treatise on the subject,* observes, that it has been ordinarily employed only in *nauseating* doses, with a view to produce general relaxation and perspiration without heating the system; but that its sedative powers, independent of these obvious effects, were not known to the physicians whom he consulted respecting the intentions with which they had employed this remedy. Dr. Balfour has adduced the most ample testimony of its powerful sedative effects, and, consequently, of its great utility in all cases where it is desirable to lessen the action of the animal economy: such testimony as, we hope, will render the use of that medicine for these purposes more generally known.

ARSENICUM. The superior efficacy of this to all other known remedies in many cases of intermittent fever, is beginning to be as well ascertained on the continent as it has been for many years in England. Amongst various reports in its favour, we may particularly notice that of Mr. GASC, which is deduced from observations made during his official attendance on the hospitals at Dantzick. “The number of patients with fever was so great in the hospital,” says that physician, “and the disease had been so rebellious to the ordinary modes of treatment that I determined to have recourse to the use of arsenic†. I first administered it to some patients affected with quartan fever, selecting those cases which were not complicated with

* *Observations, with Cases, illustrative of the sedative and febrifuge Powers of Emetic Tartar.* By W. Balfour, M. D. See *London Medical and Physical Journal*, vol. xl. p. 410.

† The preparation he employed was similar to the *Liquor Arsenicalis* of the London Pharmacopœia.

other diseases, and in which the intermission was well marked. My first trials of it were so satisfactory, and the successful results so numerous, that I did not hesitate to extend the use of it to almost all the cases of fever of that species in the hospital, without regard to particular complications of disease, provided they were not of a nature to contra-indicate it in a positive manner. Of seventy-four patients to whom it was given,—sixty-three had quartan, six tertian, and five quotidian or anomalous fever: forty left the hospital cured within a month: half of the remainder were free from fever at that period; and the others were still under treatment, which had been suspended for various reasons.”

COLCHICUM autumnale. The efficacy of this medicine for the relief of gout and rheumatism, and the safety with which it may in general be administered under judicious management,* are now generally known in Europe; and it has been commonly employed in the United States for some time with the same intentions. The diuretic and cathartic property of this medicine led Dr. CLARKE, of Philadelphia, to suppose that it would be well adapted for many cases of dropsy; and he has employed it in one case with success.—“ A black woman, aged 32 years, had ascites and anasarca of the lower extremities. I gave her two hundred drops of the tinct. colchici in the morning, which produced a very copious discharge of urine and watery fæces. The use of the medicine was continued for nine days, in which time the dropsical swelling had completely disappeared, and nothing was then left for me but to prescribe a little tonic medicine. In the space of nineteen days, I had the satisfaction of seeing her restored to her usual state of health.”†

GALVANISM. We shall quote the remarks of Dr. WILSON PHILIP on the use of this agent as a remedy for disease.

“The experiments related in the preceding enquiry‡ seem to point out, more precisely than former observations have done, what we are to expect from the use of galvanism in the cure of

* For some useful observations on this subject, see *London Medical and Physical Journal*, vol. xl. p. 396.

† *American Medical Recorder*, vol. i. p. 377.

‡ *An Experimental Enquiry into the Laws of the Vital Functions*, &c.; by A. P. Wilson Philip, M. D. F. R. S. E. &c. Second edition. London, 1818.

disease; and I think it will appear from what I am about to say, that, to the want of discrimination in its employment, we must ascribe the little advantage which medicine has hitherto derived from the discovery of this influence.

“It is an inference I have already had occasion to observe, from my own experiments and observations, as well as those of others, particularly of M. le Gallois, that what is called the nervous system comprehends two distinct systems,—the sensorial, and the nervous system properly so called. Now it does not appear, from the foregoing enquiry, that galvanism can perform any of the functions of the sensorial system; yet, in the greater number of instances in which it has been used in medicine, it has been expected to restore the sensorial power: it has been expected to restore hearing, and sight, and voluntary power. It may now and then happen, in favourable cases, from the connection which subsists between the sensorial and nervous systems, that, by rousing the energy of the latter, we may excite the former. It would be easy to show, that we have little reason to expect that this will often happen. We have also reason to believe that galvanism has no other power over the muscular system than that of a stimulus; we are, therefore, to expect little more advantage from it, in diseases depending chiefly on faults of the sanguiferous system, than from other stimuli, &c. But I cannot help regarding it as almost ascertained, that in those diseases in which the derangement is in the nervous power alone, where the sensorial functions are entire, and the vessels healthy, and merely the power of secretion, which seems immediately to depend on the nervous system, is in fault, galvanism will often prove a valuable means of relief.”

Habitual asthma, unaccompanied with evident inflammation, was the species of disease in which it was employed with most benefit. Many of the patients were working people of the city where Dr. Philip resides, who had been obliged to abandon their usual occupations in consequence of it; and some of them from its long continuance, without any hope of returning to regular work. Most of them had tried the usual means in vain. By the use of galvanism, they were relieved in different degrees, but all sufficiently to be restored to their employments. Several of them, whom Dr. Philip saw lately, said they had continu-

ed to work without any inconvenience, although they had not used galvanism for many months. Some, in whom the disease had been wholly removed, remained quite free from it; some have had a return of it, and have derived the same advantage from galvanism as at first. It was applied in the following manner:—

Two thin plates of metal, about two or three inches in diameter, dipped in water, were applied, one to the nape of the neck, the other to the pit of the stomach, or rather lower. The wires from the different ends of the trough were brought into contact with these plates, and as great a galvanic power maintained as the patient could bear without complaint. The operation was discontinued as soon as the patient said that his breathing was easy, which generally happened in from five minutes to a quarter of an hour. It was seldom used more than once a-day; but, in some of the most severe cases, it was applied morning and evening. It failed to give considerable relief only in about one-tenth of the cases to which it was applied.

In order to apply this powerful agent with sufficient precision, and with a confident expectation of beneficial results, not only a correct knowledge of the nature of the individual disease, but accurate anatomical and general physiological information is requisite; particularly as regards the nervous system. It is also necessary that the medical practitioner be well acquainted with the nature of that agent, its mode of influence, and the various ways of producing and regulating it according to accidental circumstances. There is no work from which this knowledge can be so fully obtained, and with so much facility, as from the treatise of Dr. BOSTOCK on this subject.*

HELLEBORUS, *albus et niger*. A Memoir, relating an account of some experiments made with these plants by M. SCHABEL of Weissenbourg, was read, in September last, to the Medical Society of Emulation of Paris. Although nothing of great importance is adduced, yet we consider every thing relative to this subject too interesting to be passed over without notice. We shall not detail the experiments of M. Schabel, but merely the conclusions he has deduced from them.

* *An account of the History and present state of Galvanism;* by John Bostock, M. D. F. R. S. &c. pp. 158. London, 1818.

The lethiferous properties of those plants very much resemble each other.

These properties appear to reside principally in the resinous parts, and are not neutralized by the tincture of nut-galls, as many physicians have asserted. The emetic properties attributed to the resinous, and the narcotic to the gummy parts of these roots, has not been confirmed by experience.

The influence of these poisons is not only injurious to animals, but also to vegetables.

The effects they produce on the higher classes of animals are determined by the same circumstances on which those of the poisonous bitters, arsenic, and prussic acid, depend.

Their action is most marked when they are introduced into the blood-vessels, or applied on the serous membranes, or on organs well furnished with blood-vessels. The influence is exerted through the medium of the circulation.

Their effects are—slow, difficult respiration; slowness, and sometimes, irregularity of the pulse; vomiting of mucous and bilious matter; increased secretion of saliva; vacillation; vertigo; convulsions, followed by tetanus; and diminution of heat. At length the animal becomes cold, respire after long intervals, exhibiting hardly any signs of life; which is lost by degrees.

In those animals who have not been killed immediately by this poison, the lungs are found heavy, gorged with blood, either generally or partially of a brownish colour, and covered with a dense membrane. The gall-bladder is filled with bile, a large quantity of which is found in the superior part of the intestinal canal, and the mucous membrane of this cavity often shows signs of inflammation. The liver is frequently distended with blood. A large quantity of black blood is found in the great venous trunks; and the right, and sometimes the left cavities of the heart. The irritability of the muscles of both organic and animal life is still considerable, and the nerves possess the power of conveying impressions. The other organs do not evince any thing remarkable.

Black hellebore was much employed, two or three centuries since, as an emmenagogue, but it appears to be much neglected at the present time. Dr. MACLEAN, of Edinburgh, is disposed

to think very favourably of its powers in that respect, and has published some observations tending to demonstrate them.*

HYDRARGYRUS. Dr. SALAMANCA, of the Royal Marine Hospital of Spain, has made public some observations on the use of the prussiate of mercury in the treatment of syphilis, and some diseases of the lymphatic system; apparently owing to the remarks of M. CHAUSSIER respecting the superiority of this preparation for those purposes. The cases related by Dr. Salamanca do not appear to us either to be sufficiently interesting to merit detail, or to prove what the author would indicate. The history of the cases is too concise to permit any satisfactory judgment to be formed respecting them; and we consider that the measures generally adopted by judicious practitioners would have been equally successful. This author, however, states that, besides syphilitic, many dartrous and psoric affections, which had withstood all the usual means, disappeared under the use of this remedy. The ordinary dose was a teaspoonful of a solution formed of eight grains of the prussiate of mercury in eight ounces of water.

MOXA. We notice this subject principally from a desire to excite the attention of our readers to a remedy that it is much to be wished were introduced into practice in this country. The cases of hydrocephalus, in which it was employed by Dr. REGNAULT, related in the last volume of this Journal, are such testimonials in its favour as cannot fail to make a deep impression on the mind of every reflective medical practitioner; and, we should think, would effect what we have indicated.

NUX VOMICA. The accounts published by MM. FOUQUIER and HUSSON of their experiments with this remedy, have led to an extensive trial of its properties by other physicians; the results of which show it to be an highly valuable medicine, but which requires much caution in its application. Some cases, where it has been used by Drs. LESCURE and FINOT with the most evident benefit, will be detailed in another part of the present number of this Journal. We have chosen those to which we refer, from a series of successful instances of the application of this remedy, from their particularly pointing out its more

* See *London Medical and Physical Journal*, vol. xl. p. 16.

immediate effects, and the ill consequences that may ensue from its use when not judiciously administered.

TODDALIA. Although the consumption of cinchona bark at the present period is very small in proportion to what it was half a century since, yet, as MM. Humboldt, Bonpland, and other travellers assert, that it appears probable that the forests of Peru and the Andes will, before a century is passed, be exhausted of that valuable remedy, every substance apparently resembling it in its properties merits attentive consideration. Many physicians think that the bark of the willow, oak, horse-chesnut, &c. in our country, is no mean substitute for that of the Loxa of Peru; but it is probable that it is to warmer climates we must look for the most efficacious remedies of this class. Dr. VIREY, in a Memoir in the *Journal de Pharmacie*, states, that M. Bosc has received from M. Hubert, a botanist of the Isle of Bourbon, some specimens of the bark of a shrub, which is generally employed in the East-Indies, the islands of Madagascar, France, Bourbon, &c. as a febrifuge in place of cinchona, with the most satisfactory results.

This bark is rolled somewhat like the cinchona, covered with an epidermis of a brown or greyish colour, interspersed with yellowish spots. The epidermis is about a line in thickness, granular in its tissue, and of a bright yellowish brown colour: its taste is slightly bitter and aromatic. The interior bark, which constitutes the *liber*, is thin; of a reddish-brown colour; of a singularly bitter and poignant taste, somewhat resembling pepper in warmth, with a mixture of sweetness: its fracture does not present a resinous appearance.

The shrub that furnishes it is very common in Asia and some of the African islands: it is described by Van Rheedé, in his *Hortus Malabaricus* (tom. v. fig. 41,) under the name of *Kaka-Toddali*. It is a small thorny shrub, with tortuous branches, according to Commerson. The flowers are axillary, composed of a five-parted calyx, five petals, five stamens, three styles, and three stigmas. The fruit is a berry about the size of a nut, containing five oval-shaped seeds: it is rugous on its surface, and contains a volatile oil, in the same manner as orange-peel. The leaves are ternate, covered like those of milfoil, with small

translucid points, oval, lanceolated, a little dentated, and armed with prickles like the stalks and branches.

Linnæus placed this plant in the class *pentandria*, order *trigynia*, under the name of *paullinia Asiatica*. Schreiber made it the genus *crantzia*; which has been changed into that of *scopolia* by Smith and Wildenow, under the name of *scopoliata aculeata*; and arranged with the *adelia* by De Lamark. Jussieu preserved the name of *toddalia*, by which it is known on the coast of Malabar.

An Account of some Experiments made on the Body of a Criminal immediately after Execution, with Physiological and Practical Observations. By ANDREW URE, M. D. M. G. S.

[From the Journal of Science and the Arts, No. XII.]

CONVULSIONS accidentally observed in the limbs of dead frogs, originally suggested to Galvani, the study of certain phenomena, which from him have been styled Galvanic. He ascribed these movements to an electrical fluid or power, innate in the living frame, or capable of being evolved by it, which he denominated Animal Electricity. The *Torpedo*, *Gymnotus* and *Silurus Electricus*, fish endowed with a true electrical apparatus, ready to be called into action by an effort of their will, were previously known to the naturalist, and furnished plausible analogies to the philosopher of Bologna. Volta, to whom this science is indebted for the most brilliant discoveries on its principles, as well as for its marvellous apparatus, justly called by his name, advanced powerful arguments against the hypothesis of Galvani. He ascribed the muscular commotions, and other phenomena, to the excitation of common electricity, by arrangements previously unthought of by the scientific world, merely by the mutual contact of dissimilar bodies; metals, charcoal, and animal matter, applied either to each other, or conjoined with certain fluids. And at the present day, perhaps the only facts which seem difficult to reconcile with the beautiful theory of electro-motion, invented by the Pavian Professor, are some experiments of Aldini, the nephew of the original discoverer.

In these experiments, neither metals nor charcoal was employed. Very powerful muscular contractions seem to have been excited, in some of the experiments, by bringing a part of a warm-blooded, and of a cold-blooded animal, into contact with each other; as the nerve and muscle of a frog, with the bloody flesh of the neck of a newly decapitated ox. In other experiments, the nerves and muscles of the same animal, seem to have operated Galvanic excitation; and again, the nerve of one animal acted with the muscle of another. He deduces from his experiments, an inference in favour of his uncle's hypothesis, that a proper animal electricity is inherent in the body, which does not require the assistance of any external agent, for its development. Should we admit the reality of these results, we may perhaps venture to refer them to a principle analogous to Sir H. Davy's pile, or voltaic circuit, of two dissimilar liquids and charcoal. This part of the subject is however involved in deep obscurity.

Many experiments have been performed in this country and abroad, on the bodies of criminals, soon after their execution. Vassali, Julio, and Rossi, made an ample set, on several bodies decapitated at Turin. They paid particular attention to the effect of Galvanic electricity on the heart, and other involuntary muscles; a subject of much previous controversy. Volta asserted, that these muscles are not all sensible to this electric power. Fowler maintained, that they were affected; but with difficulty, and in a slight degree. This opinion was confirmed by Vassali; who further showed, that the muscles of the stomach, and intestines, might thus also be excited. Aldini, on the contrary, declared, that he could not affect the heart by his most powerful Galvanic arrangements.

Most of the above experiments were however made, either without a voltaic battery, or with piles, feeble in comparison with those now employed. Those indeed performed on the body of a criminal, at Newgate, in which the limbs were violently agitated; the eyes opened and shut; the mouth and jaws worked about, and the whole face thrown into frightful convulsions, were made by Aldini, with, I believe, a considerable series of voltaic plates.

A circumstance of the first moment, in my opinion, has been

too much overlooked in experiments of this kind,—that a muscular mass through which the galvanic energy is directly transmitted, exhibits very weak contractile movements, in comparison with those which can be excited by passing the influence along the principal nerve of the muscle. Inattention to this important distinction, I conceive to be the principal source of the slender effects hitherto produced in such experiments on the heart, and other muscles independent of the will. It ought also to be observed, that too little distinction has been made between the positive and negative poles of the battery; though there are good reasons for supposing, that their powers on muscular contraction are by no means the same.

According to Ritter, the electricity of the positive pole augments, while the negative diminishes the actions of life. Tumefaction of parts is produced by the former; depression by the latter. The pulse of the hand, he says, held a few minutes in contact with the positive pole, is strengthened; that of the one in contact with the negative is enfeebled; the former is accompanied with a sense of heat, the latter with a feeling of coldness. Objects appear to a positively electrified eye, larger, brighter, and red; while to one negatively electrified, they seem smaller, less distinct, and bluish,—colours indicating opposite extremities of the prismatic spectrum. The acid and alkaline tastes, when the tongue is acted on in succession by the two electricities, are well known, and have been ingeniously accounted for by Sir H. Davy, in his admirable Bakerian Lectures. The smell of oxymuriatic acid, and of ammonia, are said by Ritter, to be the opposite odours, excited by the two opposite poles; as a full body of sound and a sharp tone are the corresponding effects on the ears. These experiments require verification.

Consonant in some respects, though not in all, with these statements, are the doctrines taught by a London practitioner, experienced in the administration of medical electricity. He affirms, that the influence of the electrical fluid of our common machines, in the cure of disease, may be referred to three distinct heads; first, the form of *radii*, when projected from a point positively electrified; secondly, that of a star, or the negative fire, concentrated on a brass ball; thirdly, the Leyden

explosion. To each of these forms he assigns a specific action. The first acts as a sedative, allaying morbid activity; the second as a stimulant, and the last has a deobstruent operation in dispersing chronic tumours. An ample narrative of cases is given in confirmation of these general propositions. My own experience leads me to suppose, that the negative pole of a voltaic battery, gives more poignant sensations than the positive.

But unquestionably, the most precise and interesting researches on the relation between voltaic electricity and the phenomena of life, are those contained in Dr. Wilson Philip's *Dissertations in the Philosophical Transactions*, as well as in his *Experimental Inquiry into the Laws of the Vital Functions*, more recently published.

In his earlier researches, he endeavoured to prove, that the circulation of the blood, and the action of the involuntary muscles, were independent of the nervous influence. In a late paper, read in January 1816, he showed the immediate dependence of the secretory functions on the nervous influence.

The eighth pair of nerves distributed to the stomach, and subservient to digestion, were divided by incisions in the necks of several living rabbits. After the operation, the parsley which they ate remained without alteration in their stomachs; and the animals, after evincing much difficulty of breathing, seemed to die of suffocation. But when in other rabbits, similarly treated, the galvanic power was transmitted along the nerve, below its section, to a disc of silver placed closely in contact with the skin of the animal, opposite to its stomach, no difficulty of breathing occurred. The voltaic action being kept up for twenty-six hours, the rabbits were then killed, and the parsley was found in as perfectly digested a state, as that in healthy rabbits fed at the same time; and their stomachs evolved the smell peculiar to that of a rabbit during digestion. These experiments were several times repeated with similar results.

Hence it appears, that the galvanic energy is capable of supplying the place of the nervous influence, so that while under it, the stomach, otherwise inactive, digests food as usual.

I am not, however, willing to adopt the conclusion drawn by its ingenious author, that the "identity of galvanic electricity and nervous influence is established by these experiments." They clearly show a remarkable analogy between these two powers, since the one may serve as a substitute for the other. It might possibly be urged by the anatomist, that as the stomach is supplied by twigs of other nerves, which communicate under the place of Dr. Philip's section of the *par vagum*, the galvanic fluid may operate merely as a powerful stimulus, exciting those slender twigs to perform such an increase of action as may compensate for the want of the principal nerve. The above experiments were repeated on dogs, with like results; the battery never being so strong, as to occasion painful shocks.

The removal of dyspnœa, as stated above, led him to try galvanism as a remedy in asthma. By transmitting its influence from the nape of the neck to the pit of the stomach, he gave decided relief in every one of twenty-two cases, of which four were in private practice, and eighteen in the Worcester Infirmary. The power employed varied from ten to twenty-five pairs.

The general inferences deduced by him from his multiplied experiments, are, that voltaic electricity is capable of effecting the formation of the secreted fluids when applied to the blood in the same way in which the nervous influence is applied to it; and that it is capable of occasioning an evolution of caloric from arterial blood. When the lungs are deprived of the nervous influence by which their function is impeded, and even destroyed, when digestion is interrupted, by withdrawing this influence from the stomach, these two vital functions are renewed by exposing them to the influence of a galvanic trough. "Hence," says he, "galvanism seems capable of performing all the functions of the nervous influence in the animal economy; but obviously it cannot excite the functions of animal life, when acting on parts endowed with the living principle."

M. Gallois, an eminent French physiologist, had endeavoured to prove that the motion of the heart depends entirely upon the spinal marrow, and immediately ceases when the spinal

marrow is removed or destroyed. Dr. Philip appears to have refuted this notion by the following experiments. Rabbits were rendered insensible by a blow on the occiput; the spinal marrow and brain were then removed, and the respiration kept up by artificial means: the motion of the heart, and the circulation, were carried on as usual. When spirit of wine, or opium, was applied to the spinal marrow or brain, the rate of the circulation was accelerated.

These general physiological views will serve, I hope, as no inappropriate introduction to the detail of the galvanic phenomena, exhibited here on the 4th of November, in the body of the murderer Clydsdale; and they may probably guide us to some valuable practical inferences.

The subject of these experiments, was a middle sized, athletic, and extremely muscular man, about thirty years of age. He was suspended from the gallows nearly an hour, and made no convulsive struggle after he dropped; while a thief executed along with him, was violently agitated for a considerable time. He was brought to the anatomical theatre of our university in about ten minutes after he was cut down. His face had a perfectly natural aspect, being neither livid nor tumefied, and there was no dislocation of his neck.

Dr. Jeffray, the distinguished Professor of Anatomy, having on the preceding day requested me to perform the galvanic experiments, I sent to his theatre with this view, next morning, my *minor* voltaic battery, consisting of 270 pairs of four inch plates, with wires of communication, and pointed metallic rods with insulating handles, for the more commodious application of the electric power. About five minutes before the police officers arrived with the body, the battery was charged with a dilute nitro-sulphuric acid, which speedily brought it into a state of intense action. The dissections were skilfully executed by Mr. Marshall, under the superintendence of the Professor.

Exp. 1. A large incision was made into the nape of the neck, close below the *occiput*. The posterior half of the *atlas vertebra* was then removed by bone forceps, when the spinal marrow was brought into view. A considerable incision was at the same time made in the left hip, through the great

gluteal muscle, so as to bring the sciatic nerve into sight; and a small cut was made in the heel. From neither of these did any blood flow. The pointed rod connected with one end of the battery was now placed in contact with the spinal marrow, while the other rod was applied to the sciatic nerve. Every muscle of the body was immediately agitated with convulsive movements, resembling a violent shuddering from cold. The left side was most powerfully convulsed at each renewal of the electric contact. On moving the second rod from the hip to the heel, the knee being previously bent, the leg was thrown out with such violence, as nearly to overturn one of the assistants, who in vain attempted to prevent its extension.

Exp. 2. The left phrenic nerve was now laid bare at the outer edge of the *sterno-thyroideus* muscle, from three to four inches above the clavicle; the cutaneous incision having been made by the side of the *sterno-cleido-mastoideus*. Since this nerve is distributed to the diaphragm, and since it communicates with the heart through the eighth pair, it was expected, by transmitting the galvanic power along it, that the respiratory process would be renewed. Accordingly, a small incision having been made under the cartilage of the seventh rib, the point of the one insulating rod was brought into contact with the great head of the diaphragm, while the other point was applied to the phrenic nerve in the neck. This muscle, the main agent of respiration, was instantly contracted, but with less force than was expected. Satisfied, from ample experience on the living body, that more powerful effects can be produced in galvanic excitation, by leaving the extreme communicating rods in close contact with the parts to be operated on, while the electric chain or circuit is completed, by running the end of the wires along the top of the plates in the last trough of either pole, the other wire being steadily immersed in the last cell of the opposite pole, I had immediate recourse to this method. The success of it was truly wonderful. Full, nay, laborious breathing, instantly commenced. The chest heaved, and fell; the belly was protruded, and again collapsed, with the relaxing and retiring diaphragm. This process was continued,

without interruption, as long as I continued the electric discharges.

In the judgment of many scientific gentlemen who witnessed the scene, this respiratory experiment was perhaps the most striking ever made with a philosophical apparatus. Let it also be remembered, that for full half an hour before this period, the body had been well nigh drained of its blood, and the spinal marrow severely lacerated. No pulsation could be perceived meanwhile at the heart or wrist; but it may be supposed, that, but for the evacuation of the blood,—the essential stimulus of that organ,—this phenomenon might also have occurred.

Exp. 3. The supra-orbital nerve was laid bare in the forehead, as it issues through the supra-ciliary *foramen*, in the eyebrow: the one conducting rod being applied to it, and the other to the heel, most extraordinary grimaces were exhibited every time that the electric discharges were made, by running the wire in my hand along the edges of the last trough, from the 220th to the 227th pair of plates; thus fifty shocks, each greater than the preceding one, were given in two seconds: every muscle in his countenance was simultaneously thrown into fearful action; rage, horror, despair, anguish, and ghastly smiles, united their hideous expression in the murderer's face, surpassing far the wildest representations of a Fuseli or a Kean. At this period several of the spectators were forced to leave the apartment from terror or sickness, and one gentleman fainted.

Exp. 4. The last galvanic experiment consisted in transmitting the electric power from the spinal marrow to the ulnar nerve, as it passes by the internal condyle at the elbow; the fingers now moved nimbly, like those of a violin performer; an assistant, who tried to close the fist, found the hand to open forcibly, in spite of his efforts. When the one rod was applied to a slight incision in the tip of the fore-finger, the fist being previously clenched, that finger extended instantly; and from the convulsive agitation of the arm, he seemed to point to the different spectators, some of whom thought he had come to life.

An hour having been spent in these galvanic operations, I

then prepared to execute an experiment with the view of determining, by a new and simple mode, the quantity of residual air in the lungs. This physiological problem has been attempted to be solved in a great variety of ways; and the wide discrepancy of the results obtained by eminent philosophers, satisfied me, that the methods of operating hitherto adopted, must have been more or less erroneous. The *trachea* being cut across below the *pomum Adami*, a short brass tube was introduced into it, and firmly secured in its place by hooping with packthread; into this tube a stop-cock was screwed, air-tight. A glass globe of 159.3 cubic inches in capacity, with an attached brass cap and stop-cock for weighing gases, being previously exhausted by an excellent air-pump, and nicely poised at a delicate balance, was now connected with the stop-cock in the *trachea*. A small opening was then carefully made on each side into the *thorax*. When the communication between the lungs and the globe was opened by turning the stop-cocks, the air was heard to rush forcibly into the latter with a whizzing sound; when this ceased, the stop-cocks were again shut, the globe unscrewed, and suspended at the balance.

Its increase of weight was found to be exactly 31.8 grains. To ascertain whether the lungs and attached brass tube were perfectly air-tight, the globe was again connected with the windpipe, as before, and on re-opening the communication, a momentary puff of air only was heard to enter the globe; after which no sound of moving air could be perceived: the additional increase of weight was only 1.6 grains, though the connection was left open for some time, and though the globe was not more than two thirds replenished with air, or the included air was only two-thirds of the atmospherical tension.

By subsequent examination, the bulk of these 33.4 grains of air was found to be 105.2 cubic inches, consisting of about 91 of azote, mixed with a little oxygen, and 14.2 of carbonic acid. It is possible, that a larger proportion of carbonic acid than $13\frac{1}{2}$ per cent., would have been found before the galvanic respiration; though from the accurate experiments of M.M. Allen and Pepys, we see, that breathing becomes intolerable with atmospherical air, charged with 10 per cent. of that

noxious gas. By the preceding method, it is obvious that the whole of the residual air may be readily extracted from the lungs without doing the slightest violence to their texture, while the fallacies incident to some of the former plans of experimenting are avoided; yet my result coincides very well with Dr. Goodwyn's determination of 109 cubic inches, obtained in a very different way. Variations must be expected according to the size of the person's *thorax*.

In deliberating on the above galvanic phenomenon, we are almost willing to imagine, that if, without cutting into and wounding the spinal marrow and blood-vessels in the neck, the pulmonary organs had been set a-playing at first, (as I proposed) by electrifying the phrenic nerve (which may be done without any dangerous incision,) there is a probability that life might have been restored. This event, however little desirable with a murderer, and perhaps contrary to law, would yet have been pardonable in one instance, as it would have been highly honourable and useful to science. From the accurate experiments of Dr. Philip, it appears that the action of the diaphragm and lungs is indispensable towards restoring the suspended action of the heart and great vessels, subservient to the circulation of the blood.

It is known that cases of death-like lethargy, or suspended animation, from disease and accidents, have occurred, where life has returned, after longer interruption of its functions, than in the subject of the preceding experiments. It is probable, when apparent death supervenes from suffocation with noxious gases, &c. and when there is no organic læsion, that a judiciously directed galvanic experiment, will, if any thing will, restore the activity of the vital functions. The plans of administering voltaic electricity hitherto pursued in such cases, are, in my humble apprehension, very defective. No advantage, we perceive, is likely to accrue from passing electric discharges across the chest, directly through the heart and lungs. On the principles so well developed by Dr. Philip, and now illustrated on Clydsdale's body, we should transmit along the channel of the nerves, that substitute for nervous influence, or that power which may perchance awaken its dormant faculties. Then, indeed, fair hopes may be formed of deriving

extensive benefit from galvanism; and of raising this wonderful agent to its expected rank, among the ministers of health and life to man.

I would, however, beg leave to suggest another nervous channel, which I conceive to be a still readier and more powerful one, to the action of the heart and lungs than the phrenic nerve. If a longitudinal incision be made, as is frequently done for aneurism, through the integuments of the neck at the outer edge of the *sterno-mastoideus* muscle, about halfway between the clavicle and angle of the lower jaw; then, on turning over the edge of this muscle, we bring into view the throbbing carotid, on the outside of which, the *par vagum*, and great sympathetic nerve, lie together in one sheath. Here, therefore, they may both be directly touched and pressed by a blunt metallic conductor. These nerves communicate directly, or indirectly, with the phrenic; and the superficial nerve of the heart is sent off from the sympathetic.

Should, however, the phrenic nerve be taken, that of the left side is the preferable of the two. From the position of the heart, the left phrenic differs a little in its course from the right. It passes over the *pericardium*, covering the *apex* of the heart.

While the point of one metallic conductor is applied to the nervous cords above described, the other knob ought to be firmly pressed against the side of the person, immediately under the cartilage of the seventh rib. The skin should be moistened with a solution of common salt, or what is better, a hot saturated solution of sal-ammoniac; by which means, the electric energy will be more effectually conveyed through the cuticle, so as to complete the voltaic chain.

To lay bare the nerves above described, requires, as I have stated, no formidable incision, nor does it demand more anatomical skill, or surgical dexterity, than every practitioner of the healing art ought to possess. We should always bear in mind, that the subject of experiment is at least insensible to pain; and that life is at stake, perhaps irrecoverably gone. And assuredly, if we place the risk and difficulty of the operations, in competition with the blessings, and glory consequent on success, they will weigh as nothing, with the intelli-

gent and humane. It is possible, indeed, that two small brass knobs, covered with cloth moistened with solution of sal-ammoniac, pressed above and below, on the place of the nerve, and the diaphragmatic region, may suffice, without any surgical operation. It may first be tried.

Immersion of the body in cold water accelerates greatly the extinction of life arising from suffocation; and hence less hopes need be entertained, of recovering drowned persons after a considerable interval, than when the vital heat has been suffered to continue with little abatement. None of the ordinary practices judiciously enjoined by the Humane Society, should ever on such occasion be neglected. For it is surely criminal to spare any pains which may contribute, in the slightest degree, to recal the fleeting breath of man to its cherished mansion.

Account of the Elephantiasis in Iceland, from the Journal of a residence in that Island during the years 1814 and 1815, by
EBENEZER HENDERSON.

A little to the west of this place, we came to *Horgland* Hospital, one of the four establishments existing on the Island for the reception of incurable lepers, where I had an opportunity of contemplating that loathsome disease, so particularly described in the Levitical code, and which gave occasion to the composition of one of the most sublime pieces of Hebrew poetry that is to be met with in the sacred volume.

Two females were at this time in the Hospital, the one about thirty, and the other upwards of fifty years of age. The latter of those objects exhibited the most miserable spectacle I ever beheld. Her face and hands were swelled to a frightful degree, and full of livid red sores or blotches, between which appeared scars or rents, resembling cuts in a high state of inflammation. The other seemed to be affected with a less malignant species of the same malady: for though her face was also swelled, no pustules appeared; but the skin was covered with whitish glossy scales, and in some places intersected by reddish streaks, which are most probably a disposition to wrin-

kles. They were both sitting at the door of the Lazar-house, and the deepest melancholy seemed depicted in their looks.

It is now generally agreed among physicians that the Icelandic leprosy is the legitimate *Elephantiasis*, or *Lepra Arabum*, one of the most Herculean distempers ever employed as scourges to the human race. In its primary stages, its symptoms are inconsiderable, and very ambiguous. A small reddish spot, scarcely larger than the point of a needle, breaks out at first about the forehead, nose, corner of the eyes, and the lips; and, in proportion as it increases, other pustules make their appearance on the breast, arms, arm-pits, &c. which generally dry up in one place and break out in another without pain, till the disease has considerably advanced, when they cover almost the whole body, give the skin a scabious appearance, stiffen it, and terminate sometimes in shining scales, which fall off like dust, sometimes in malignant tumours and swellings. The patient in the mean time, labours under lassitude of body, anæsthesia, and lowness of spirits.

When the malady becomes inveterate, the breath, which before was disagreeable, now gets intolerably fœtid; a strong untuons matter is perspired; the hair already changed in colour falls off; the voice grows hoarse and nasal; and the face becomes terribly deformed.

The look is wild and haggard; the pallid red colour of the body is only relieved by the most disgusting ulcers; which, becoming deeper, putrid, and virulent, not only affect the bones and joints, but, as they spread over the skin, deep ravines are formed, which give it an elephantine appearance, whence the name elephantiasis. The fingers get quite stiff and crooked, and the nails and other parts of the body fall off by degrees. During the night the patient is harassed with terrible dreams, and he is oppressed by day with a tedious melancholy, in which he is often tempted to make away with himself. He gradually surrenders one part of his body after another to the insatiate malady; and, at length, death, the long wished-for deliverer, comes suddenly and puts an end to his misery.

As the leprosy is infectious, almost every person shuns the company of the sufferer, which must greatly add to the misery of his situation; nor can he flatter himself, after the distemper

has advanced to a certain degree, with any hopes of relief from medical assistance. It is considered to be irregularly hereditary; yet symptoms do not become visible before the person has reached the years of maturity. In cases of infection too, it generally happens that three or four years elapse before any eruption breaks out on the skin. It then proceeds with slow, but steady progress, and it is possible for the person who is afflicted with it, to drag out a wretched existence to the protracted term of fifty or sixty years. Very emphatically have the inhabitants of the East given this disease, among other significatory designations, "The First born of Death." Nor is the Icelandic "Likthrá" scarcely less striking. It properly signifies a rancid, putrefying corpse, than which there is nothing a person inveterately affected with the leprosy more perfectly resembles. The origin of this dreadful malady has been traced to Egypt, where it still exists, as also in Arabia, Morocco, China, Tartary, some parts of Russia and Sweden, the sea coasts of Norway, the West-Indian and Feroe islands, and Iceland. It was first transported by the Phœnicians into Greece: it followed the Romans on their return from Asiatic conquest, and from the twelfth to near the end of the sixteenth century, it was the terror and scourge of Europe, into which it was introduced a second time by the Crusades. What a mercy that we are now almost entirely freed from a disease, whose victims were at one time so numerous in Europe, that every country in it was filled with hospitals for their reception! The leprosy prevails most in the south and west quarters of Iceland, which is to be ascribed to the inhabitants of these parts being mostly employed in fishing, the rancidity of their food, their wet woollen clothes, an insalubrious air, and their not paying due attention to habits of cleanliness. The four hospitals, one in each quarter, were established in the year 1652, as appears from two royal receipts of that date, in virtue of which, four farms belonging to the crown were appropriated to that purpose; the supernumerary utensils and articles in the possession of the cloisters, were to be devoted to their establishments, and a privilege was granted, authorizing collections to be made, and certain fines and taxes to be appropriated for their maintenance. The managers were allowed a certain gratuity for their trouble, and were, besides,

exempted from paying the common taxes. These establishments have been subject to several changes since first instituted; and at present they are placed under the direction of the Stifamtman and the Bishop, and enjoy only the fish tax, which is collected in the following manner: On the first fishing-day after Easter, an equal share of the fish taken by all the six-oared boats, is appropriated to the hospitals, except when the number of fish that is caught does not amount to five, in which case the hospital gets its share the following day. Considering the number that are afflicted with this evil, these establishments do not by any means appear adequate to their relief. It is seldom they receive more than eight lepers altogether; and, in the year 1785, not fewer than ninety-nine leprous persons were found in the diocese of *Skalholt*. What little funds they possessed have been nearly annihilated by the recent depreciation of Danish currency.

Cases illustrative of the beneficial Influence of Nux Vomica in Paralysis. Related by Dr. LESCURE.

[From the London Medical and Physical Journal, for February 1819.]

A YOUNG man, who had been afflicted with epilepsy from the age of twenty, which was first induced by the influence of terror, was twelve years afterwards attacked with *paraplegia* from a similar emotion: this new affection entirely superseded the former. Four years passed away without his experiencing any relief from the measures that were employed, when he came under the care of Dr. LESCURE. Four grains of the extract of *nux vomica* were administered daily, divided into two doses. After eight days the dose of the medicine had been raised to five grains, and to six grains in the course of the following week. The patient then began to complain of heat about the stomach; a sense of constriction in the abdomen; difficulty in passing the urine; and occasionally a sense of contraction in the muscles of the lower extremities. The use of the remedy was suspended for a short time, and then resumed in the former quantity. Three weeks afterwards, the retention of urine returned, and was more complete than on the former occasion; and it was accompanied with forcible sudden contractions in

the paralyzed limbs. These symptoms disappeared on omitting to use the extract for four days: at this time the patient was able to leave his bed, and walk about his chamber with the assistance of an arm. The medicine was then repeated in doses of eight grains: at the end of three weeks he experienced an attack of tetanus, which continued for four hours. This was followed by a still greater amelioration of the original disease, and at length by its perfect and permanent removal.

A female who had been subject to attacks of hysteria and pains about the loins and thighs, was seized with paraplegia after one of those paroxysms. The extract of *nux vomica*, conjoined with opium, was directed for her by Dr. Lescure. During the first week, the quantity administered daily of the former had been carried to six grains, that of the latter to half a grain: one grain and the sixth of a grain, respectively, were each week added to the daily doses of the medicine. At the end of a month the paralysed limbs became affected with slight contractions, to which succeeded a return of sensibility. On the forty-third day, pain about the stomach, and difficulty in swallowing and passing the urine came on; which accidents were followed by swelling of the paralytic extremities. These symptoms continued to increase for three days, when the use of the remedy was suspended. The same mode of treatment was resumed on the disappearance of these symptoms; but fifteen days afterwards they returned. On their subsidence the medicine was again administered; and eight days afterwards the patient experienced convulsive motions of the limbs, followed by tetanus and retention of urine. An amelioration of the original disease was regularly noticed after each of these attacks, and after the last the patient began to walk. The paralysis then gradually disappeared, and her health became perfectly re-established.

A female who had been affected with paralysis of the whole of the limbs, incontinence of urine, and amaurosis, subsequently to the cessation of the menses, and which continued to become more fully established, took the extract of *nux vomica* for two months. During this time two of the attacks above described, and which appear attributable to the medicine, had taken place. At the end of that period the disorder had entirely disappeared.

The following case of paralysis, treated by the same remedy, is related by Dr. FINOT, of Luxeuil:—

L. A. aged 52 years, of a robust habit of body, who had led an indolent life and indulged in excess in the use of spirituous liquors, was seized, in the month of February, 1818, with an attack of the apoplexy; which was followed by hemiplegia of the left side. All the usual measures were employed, without being productive of benefit. On the 1st of June he consulted Dr. Finot. He then had hardly any power of motion of either the arm or leg of the affected side; his speech was hardly intelligible, and the motion of one side of the tongue appeared to be performed with much difficulty. There was a distortion of the mouth, and complete eversion of the inferior eyelid of the left side.

On the 2d of June he took four grains of the powder of nux vomica; the quantity of which was increased without being productive of ill effect until the 8th, when slight spasms and convulsions of the affected limbs took place; which were succeeded by heat and pain of the parts, and greater facility of motion. The quantity of the remedy daily administered had been carried to twelve grains on the 14th of the same month, when the patient suffered darting pains and tremblings in the affected side. On the 18th, he could use the arm tolerably well, and bend the leg on the thigh, and the latter on the pelvis. On the 22d, he had recovered the power of almost the natural motion of the arm and leg, and could pronounce words with but little difficulty. The distortion of the mouth was hardly preceptible. On the 27th, after very painful darting sensations, which recurred during several successive days, the eyelid recovered its natural position. On the 30th, the patient walked with the assistance of a stick, experiencing only a little stiffness of the limbs. On the 4th of July he was perfectly well. The dose of the powder of nux vomica had been extended to twenty-four grains during the last few days.

Journal Universel des Sciences Medicales, tome xi.

Diseases contracted by Milking Cattle and Sheep.

[From the Transactions of the Literary Society of Bombay, Vol. I.]

Extract of a letter dated Bushire, 26th March 1813, from W. Bruce, Esq. resident at Bushire, to W. Erskine, Esq. of Bombay, communicating the discovery of a disease in Persia, contracted by such as milk the cattle and sheep, which is a preventive of the small pox:

"When I was in Bombay, I mentioned to you that the cow-pox was well known in Persia by the Eliaats, or wandering tribes. Since my return here I have made very particular inquiries on the subject, amongst several tribes who visit this place in the winter, to sell the produce of their flocks, such as carpets, rugs, butter, cheese, &c. Their flocks during this time are spread over the low country to graze. Every Eliaat that I have spoken to on this head, of at least six or seven different tribes, has uniformly told me, that the people who are employed to milk the cattle, caught a disease, which, after once having had, they were perfectly safe from the small pox. That this disease was prevalent among the cows and showed itself particularly on the teats; but that it was more prevalent among and more frequently caught from the sheep.—Now this is a circumstance that has never, I believe, before been known; and of the truth of it I have not the smallest doubt; as the persons of whom I inquired, could have no interest in telling me a falsehood; and it is not likely that every one whom I spoke to should agree in deceiving, for I have asked at least some forty or fifty persons. To be more sure on the subject, I made more particular inquiries of a very respectable farmer who lives about 14 miles from this, by name Malilla, (whom Mr. Babbington knows very well,) and who is under some obligations to me; this man confirmed every thing that the Eliaats had told me, and further said, that the disease was very common all over the country, and that his own sheep often had it. There may be one reason for the Eliaats saying that they

caught the infection oftener from the sheep than the cows, which is, that most of the butter, ghee, cheese, &c. is made from sheep's milk, and that the black cattle yield very little, being more used for draught than any thing else."

*On Sarsaparilla.**

BY RICHARD BATTLE, Chemist, &c.

[From the London Medical Repository, for March 1819.]

NOTWITHSTANDING the long experience which the Profession, both Medical and Surgical, have had of the qualities of Sarsaparilla, medical judgment is still divided respecting its efficacy in the cure of disease. It will, therefore, probably be considered fortunate if the ground of this difference of opinion can be satisfactorily explained.

In surgical practice, indeed, the credit of sarsaparilla has more uniformly been maintained, perhaps, because Surgeons are more frequently called upon to seek the means which increase the restorative powers of the body, when reduced by the various accidents, and by the class of diseases on which they are more particularly consulted.

It is well known, however, that even the ablest Surgeons, notwithstanding their uniform opinion as to the efficacy of this medicine, have yet doubted whether the ordinary mode of preparing it was best calculated to preserve its essential properties; hence some have been led to prescribe sarsaparilla in the inconvenient and bulky form of powder, hoping, amongst the useless, at least to retain the efficacious parts.

In the course of my attention to the preservation and preparation of medicines in their active forms, I have been induced to pay some attention to this root; and I can assert, as the result of direct experiment, that its medical properties reside,

* It is needless to say that we feel much obliged to Mr. Battley for the present communication; and that we shall always have a particular gratification in presenting to our readers the Papers which he may be good enough to forward to us. We are convinced that in the present day of scepticism and simplifying, too little attention is given to the analysis and constituent parts of the medicines which are used in practice.—LONDON EDIT.

exclusively, in the *cortical part*; and that such properties may effectually be disengaged by cold infusion in water; the root thus treated becoming a tasteless and inert substance. It follows, that when the cortical part has been materially injured, or when, in the preparation of the medicine, the ligneous part of the root has been chiefly regarded, the remedy so prepared must be, in a great measure, if not wholly, inefficacious. Various modes of improving on the simple infusion will readily suggest themselves to practitioners; and I find that an elegant preparation is produced by infusing the *perfect root* in cold lime-water; a menstruum particularly calculated to improve its medical properties when administered to dyspeptic patients.

The component parts of sarsaparilla, as far as I have been able to ascertain them, I shall reserve for a future communication.

SELECTED REVIEWS.



On the Mimoses; or, a Descriptive, Diagnostic, and Practical Essay on the Affections usually denominated Dyspeptic, Hypochondriac, Bilious, Nervous, Chlorotic, Hysteric, Spasmodic, &c. By MARSHALL HALL, M. D. Author of "A Treatise on Diagnosis;" formerly Senior President of the Royal Medical Society, and Physician's Assistant in the Royal Infirmary, Edinburgh.

[From the London Medical Repository, for February, 1819.]

ONE of the most important lessons which the student of medicine has to learn, is the art of distinguishing between diseases of function and diseases of structure; and this art is only to be fully mastered in the school of actual practice. There are, however, general and leading points in morbid affections, by attention to which the judgment may be much facilitated in the distinctions alluded to; and we think those authors deserve well of the profession and of the public, who devote their attention to the combination and concentration, as it were, of these momentous particulars.

Dr. Hall had already proved himself gifted with an accuracy of distinguishing powers, by his useful work on diagnosis; and in the small volume which is now to be noticed, we meet with additional indications of industry and discernment.

"There is a class of disorders, (says Dr. H.) each of which is singularly characterized by being complex, multiform, various, and changeable, and by imitating, from the appearance and predominance of particular symptoms in particular instances, other diseases very different in their nature.

"These affections have been variously and perhaps too exclusively attributed, by some authors, to a state of derangement in one or more of the chylopoietic viscera; and by others to an unequal and undue distribution of the blood, by which a state of arterial excitement or of venous congestion is induced in some particular organ, or in some particular part of the sanguiferous system.

We fully agree with our author, that the ascription of those complaints by one set of pathologists to vascular, and by another class of reasoners to ventricular derangements, is too "exclusive;" and it is not uncommon to find the whole frame, as it were, out of joint, without any traceable localities in the induced derangement: such topical affections, whether of the circulating or chylopoietic systems, even when they do occur, being merely incidental consequences of universal disturbance: but on this head we must not trust ourselves here to enlarge.

With respect to Dr. Hall's term of designation, we hardly know whether to approve or not of its selection. Any thing that wears the semblance of affectation is in some degree objectionable; and we have already too many names in medicine, for what, in strict propriety, are nameless things. Diseases are not substantive and abstract existences. To talk, then, of "*mimosis*" as an order, and to sub-divide this order into the several genera of "*mimosis acuta*," "*chronica*," "*decolor*," "*urgens*," and "*inquieta*," is to imply that the several conditions which the above terms are designed to represent are to be met in a palpable shape, and with an undeviating regularity. The denomination *mimosis*, it is hardly necessary to state to our readers, is derived from the Greek word *μιμος*, *imitator*, and is intended to denote the appearance without the reality of a specific affection. Thus, should an individual be the subject of cough, expectoration, and other symptoms which at times proceed from pulmonic disorganization, and yet should such disorganization not be actually present, the disease would, in the proposed nomenclature of our ingenious author, be named a *mimosis*.

Under the head of *mimosis acuta*, the reader of this volume will find some very valuable remarks on distinctions between organic affections of an acute kind, and those derangements which merely consist in temporarily deranged functions.

"The severer form of the *mimosis acuta* (says Dr. H.) is early and principally characterized and distinguished by the concurrence of the following symptoms; namely, weakness, tremor, fluttering, faintishness, tendency to perspiration, susceptibility to hurry and agitation, and loss of flesh.

"The countenance is rather pale and thin; the lips are pale,

and, with the chin, frequently tremulous, especially on speaking; the surface of the face is generally affected with an appearance of oily, clammy, and swarthy perspiration, especially near the nose; there is a loss of colour, and usually a degree of sallowness and darkness of the complexion in general, but principally about the eyes.

“The tongue is almost invariably loaded; sometimes only slightly, whilst its edges are clean and red; at other times it is more loaded, swollen, and œdematous, formed into deep sulci or plaits, and marked by pressure against the contiguous teeth, the inside of the cheeks being also impressed in the same manner; the papillæ of the tongue are numerous and enlarged; the gums red and swollen; the teeth and the mouth in general foul, and the breath loaded and fœtid: in a third instance the tongue may, however, be clean, but lobulated, whilst the internal mouth and breath are little affected. The first state of the tongue is observed when the affection has not continued long; the second, when its accession had been particularly slow and gradual; and the third, when a similar but chronic state of disorder has long subsisted, and has at length been succeeded by the *mimosis acuta*.

“There is a tendency to perspiration on slight exertion or any surprise, and sometimes in the night or early in the morning; the skin is in general cool, rather moist, and clammy. The hands are apt to be cold; and the nails occasionally assume a lilac hue.

“The patient is usually affected with great tremor, observed on holding out the hand, on carrying a cup of tea, for instance, to the mouth, on attempting to stand erect, or walk, or on being fatigued or hurried. The patient is liable to experience faintishness in the upright position, if sustained for a little time; and he feels unaccountably feeble and weary.

“There is an early and daily loss of flesh. This, as well as the restoration of flesh during recovery, may be ascertained by weighing, as exemplified in some of the cases of this affection to be given hereafter.

“The patient experiences headach and vertigo, and he is nervous, and easily hurried and agitated. There is sometimes heaviness for sleep; sometimes great wakefulness and restless-

ness. There is almost universally a peculiar sense of fluttering about the heart and pit of the stomach; and there is frequently an acute pain in some part of the course of the colon.

“The appetite is generally much impaired, and there is often loathing of food; but sometimes the appetite is even greater than natural, and there is almost constant craving. The digestion is various, being sometimes quick, and at other times attended with great sense of load, distention, flatus, eructation, hiccup, and even vomiting. The bowels are at first constipated; afterwards constipation and diarrhœa alternate, and sometimes the latter symptom becomes nearly permanent; the motions during the constipation are small, during the diarrhœa scanty, extremely fœtid, dark coloured, often accompanied by blood, and frequently attended by tenesmus.

“The urine is extremely loaded in the commencement of the *mimosis acuta*, but may become perfectly transparent during its continuance; it is often high coloured; and, like the other symptoms, the appearance of this secretion is very liable to change.

“Besides the symptoms just enumerated, there are others which prevail more or less in almost every case; but they are, on the whole, less constant and more diversified; and of these one sometimes predominates so much over the rest, as to engross the attention of the patient, and sometimes of the practitioner, too exclusively. The secondary affection is then considered as idiopathic, and the symptom is apt to be treated as the disease. It is therefore of the utmost importance to present the reader with the following distinct enumeration of these symptoms:—

“1. Headach, vertigo, stupor, &c.—2. Cough, viscid expectoration.—3. Paroxysms of oppressive dyspnœa.—4. Palpitation of the heart, frequency and irregularity of the pulse.—5. Frequent and violent hiccup, vomiting of food.—6. Some convulsive and spasmodic affections.—7. Pain in the epigastric, or one or both of the hypochondriac or chondiliac regions.—8. Constipation, diarrhœa, tenesmus.—9. *Melæna*.—10. *Icterus*.—11. Severe pains of some of the limbs.”

We have presented the above account of the characters by which mere functional derangements are marked, with a view

at once of doing justice to the author, and because we think, as before hinted, one of the most momentous concerns for a practitioner to attend to, both for his credit and his satisfaction, is that of carefully scrutinizing whether a malady to which he is summoned, be, if we may so express it, real and radical, or merely apparent and functional. We would discard with our author the terms "nervous," "bilious," and the like, as terms which are either too vague to mean any thing, or else involve an hypothesis which is frequently without any stable foundation.

The following we select from several cases with which Dr. H. presents us, under the head of *mimosis acuta*.

"*July 8th, 1818.*—Mr. S. F. aged 22. He had worked during one year in the lace frame, principally during the night, when he became affected with the following complaint, about four months ago. He first experienced an unusual degree of weakness, which incapacitated him for his employment; he then complained of a propensity to sweating on any slight exertion or emotion, with pain of the head, loss of appetite, constipation, &c. At first, too, he lost his flesh rather rapidly, to the amount, as he supposes, of about 14 lb. The countenance became palish and sallow, and he was told he had a *liver complaint*. The general weakness increased, and a degree of trembling was observed when he lifted his cup of tea to his mouth, when he attempted to walk, or underwent any fatigue.—At present the prolabia are rather pale, the face near the nose is affected with an oily perspiration, the eye-lids are dark, and the general complexion is of a palish, sallow appearance. The albuginea is perfectly white. The tongue is white, loaded, and clammy. He perspires more than usual on any exertion. He has no headach or vertigo now, and has had no cough at any time. There is a sense of fluttering about the heart and stomach, especially on lying down. He says that he is low spirited, and does not like to be long alone or still. His appetite is still impaired; he complains of a sense of load at the stomach, with eructation, but he has no hiccup. The bowels are open. The urine was at first much loaded, but it is less so now. He complains of shifting pains about the limbs.—These complaints have been nearly stationary lately, the progress they appeared

to be making at first having been arrested.—The patient became gradually better, after the date of this report, by taking opening medicines, bathing, and using gentle exercise, with a change of air.”

When treating more especially of the diagnosis, Dr. H. remarks, that “the *mimosa acuta*, in its severer but simpler form, has been generally mistaken for *fever*; in its less severe form it is necessary to distinguish it from *insidious organic disease*, and in its complications, the *mimosis acuta* must be carefully discriminated from an *original and local disease of the part symptomatically affected*.” We have some doubts with regard to the propriety of the first point of distinction, since it would seem questionable whether the general disturbance alluded to under the definition, might not, unless arrested in its course, come soon to be actual and positive fever. Dr. H. if he admits this, will perhaps reply, that the same thing may be said in reference to the occurrence of organic disease, as such disease might come to establish itself from unchecked functional disorder: but in this last case a new series of actions would be set up; while fever, if fever does occur in the way now supposed, would prove merely an increase in degree, not a something new in essence.

Insidious organic disease is to be distinguished, says Dr. H., from the *mimosis acuta* “by its *definite* form, and by a regular, slow, progressive, and almost *unvaried* course, during which the patient becomes gradually affected with paleness, debility, and emaciation, with comparatively little tremor.” These circumstances of distinction we wish to point out, particularly to the junior practitioner, as of the highest consequence to attend to. If the pulse, for instance, is quick in mere functional disease, it is not of that *unvaried* celerity that marks organic affection; neither does emaciation in the former pursue that regular and progressive course that it does in the latter. The mode of perspiration too, which we do not find particularly pointed out by Dr. Hall, is very essential to take into account: in organic disease the sweats are, for the most part, of a hectic character, but partial, and of partly regular occurrence, while in mere functional disturbance the sweats are more irregular in point of time, and more universally diffused over

the body. Let it however always be recollected, when one particular organ is the medium by which a mimositic affection is displayed, that such affection is very apt to terminate in actual organic disease. But this is by no means invariably the case. Who does not know, that what are very improperly called sick, or bilious headaches, last sometimes for years, and then disappear, without leaving behind them any traces of encephalic disorganization? and it often requires repeated recurrences of spasmodic asthma to engender organic derangement of the pulmonary or cardiac tissues*.

With respect to the treatment of the *mimoses acuta*, Dr. Hall's sheet anchor is constituted by the use of purgatives; and as the derangement usually occurs as a consequence of sedentary habits and confinement in impure air, the treatment comprises "a particular attention to diet, air, exercise, bathing, and spunging."

The following are Dr. Hall's direction as to the employment of cathartics.

"The medicines I have generally employed have been calomel, the pil. hydrarg. rhubarb, aloes, senna, the sulphat of magnesia, and pure magnesia. They must be varied according to the previous state of the bowels, and to their effect on the alvine evacuation. This previous condition of the bowels is a state of constipation, or diarrhœa, of tenesmus, or of melæna.

"In the case of constipation an active dose of calomel may be given; and if its effect is such as was desired, it may be repeated at first every fifth night, and afterwards once a week, or once in ten days, always ensuring its operation, if necessary, by a solution of the sulphat of magnesia in an infusion of senna, or by pills of aloes and rhubarb. This medicine should also be repeated on the intermediate days. The object I have ever had in view has been to avoid purging, but to induce a large, copious, and consistent evacuation daily; and when I have been enabled to effect this, I have considered it at once as a source and criterion of increased strength or health of the

* Some difference of sentiment obtains on this head, as our readers will perceive by turning to a very interesting paper on asthma in the foreign department of the present Number. LOND. EDITOR.

alimentary canal. Frequently, however, when the patient is very feeble and infirm, the medicine appears to accumulate without operation, and the effect on the bowels is apt, by a repetition of the dose, to be extreme: this event may in general be obviated, either by the administration of a proper enema at the time when the medicine was expected to move the bowels, or by inserting into the rectum a suppository of tuffy or inspissated molasses, or of soap and honey, or other similar substance."

We could have wished him to have added to his suggestions respecting the propriety of occasionally varying the purgative, some rules with regard to the *combination* of different cathartic drugs. Of the utility of uniting several articles in one prescription, we are disposed to think the simplicity of modern practice rather too neglectful: certain it is that a mixture of several is often much more effectual than the same mass of only one or two ingredients; and besides, it is well known that some purgatives display their agency more powerfully in one, and some on another part of the intestinal tube.

With respect to the treatment of the local affections which occur in the *mimosis acuta*, we do not find any directions on which it appears necessary particularly to enlarge. *Melæna*, without disorganization, Dr. H. tells us, he generally finds yield to purgatives with pil. hydrarg. Our own plan in these cases of intestinal hæmorrhage has been usually a combination of infusion of roses with sulphat of magnesia and syrup of white poppy; a combination which we have scarcely ever prescribed but with the happiest effect.

The *mimosis chronica* of Dr. Hall answers to the disease described by most authors under the title of *hypochondriasis*: "it is denoted by fits of despondency and gloom, of invincible disinclination for exertion, of pain about the head, sinking of the precordia, and heat or fulness of the stomach." The same marks of diagnosis are to be attended to, *mutatis mutandis*, as in the more acute and active state of the complaint: and here Dr. Hall particularly points out the absence of the loss of flesh as one of the principal circumstances of distinction between this and organic ailment. With regard to the treatment, "as the affection is of longer continuance, a more persevering use

of the pil. hydrarg. and of gentle purgatives of rhubarb and aloes; and a more constant and indeed habitual attention to diet, with gentle exercise, are necessary."

As the *mimosis chronica* is the *hypochondriasis*, so is the *mimosis decolor* the *chlorosis* of other authors. "This occurs principally in female youth; but frequently in married women, both young and old, and occasionally in the young and sedentary of the male sex."—"It may be characterized in general as uniting a morbid state of the complexion, and generally of the surface, with recurrent pain of the head and of the side, palpitation of the heart, fluttering and nervousness, and some tendency to loss of flesh and to œdema."

Under the head of diagnosis, between the *mimosis decolor* and other diseases, we meet with the following remarks, which are well worthy of attention:—

"The state of the complexion, the tinge of surface, and the seat of pain, in the *mimosis decolor*, has very frequently led to the suspicion of chronic disease of the liver. The diagnosis is made by an attention to the contrast of symptoms, by observing the state of the conjunctiva, urine, and fæces, by ascertaining the recurrent nature of the pain of the side, and by a careful examination of the region of the liver. By these means the list of chronic diseases of the liver would be considerably curtailed, for I can recal at this moment numerous instances of this error in diagnosis."

That discoloration of the skin which attends diseases of cachectic debility and disturbance of function, and which arises from a torpid inactive state of the circulation and consequent inaction of the sebaceous follicles of the skin, is too apt to be taken as an index of hepatic obstruction, and mercury in consequence given, without the smallest necessity, in point of fact, for the administration of a particle of that medicine. The liver is a large and convenient corner for imbecility and idleness to resort to upon all occasions. We are always ready to applaud such authors as have courage and discernment enough to bear up against the overwhelming influence of hepatism.

This *mimosis decolor* is liable to be complicated with transient and continued affections of the head, with sudden and

continued cough and dyspnœa, with palpitation of the heart, with both transient, and protracted pain in the side or abdomen, with melæna, and with leucorrhœa; in all of which, the practitioner must carefully distinguish by the rules before laid down between mere pain and actual inflammation; and he must, at the same time, recollect the probability of a transition from functional disturbance into actual or inflammatory disorder of the organ.

Purging is still recommended in this species of mimosis, and there cannot be a question of its great utility; but we are disposed to think that, with purgatives, steel and other tonics may be here employed with more advantage than our author seems to imagine; nay, we are certain, that a judicious use of this class of medicinals may be made to apply in the disorders now under consideration with especial benefit: even actual inflammations may be warded off by the induction of such a state of permanent excitement as shall overcome the debility out of which the vascular irritation would otherwise grow. For the leucorrhœa connected with the mimosis decolor, Dr. H. recommends a *continued* local application of sulphat of zinc, in the proportion of from one to two drachms and a half to a pint of pure water. The way in which this application is continued is by a scroll of linen, made of a form and bulk nearly sufficient to fill the vagina, this scroll being fully embued with the solution mentioned. We are surprised to find no notice taken of that very efficacious medicine the tinct. lyttæ in these complaints.

The mimosis urgens is the fourth division of Dr. Hall, and this is more like the hysteria of authors; "it is denoted by sighing, sobbing, tears, or laughter, with a sense and expression of suffocation, and with some urgent affection of the head, heart, respiration, stomach, or muscular system." Spasmodic affections are here especially frequent, and the disorder is marked, as the author well expresses it, "by hurry and urgency." Inflammations are in this case likely to grow out of the spasms, and it requires sometimes much nicety to distinguish which is the actual state of parts. At this moment we have a patient under treatment who had been very injudiciously taking steel for supposed spasms; a complete diaphragmatis was engender-

ed, but it was found necessary to go very cautiously to work with anti-inflammatory measures, as their use, even in a regulated and necessary measure, actually brought on very distressing spasms. In this state of things alarm is, however, apt to be more than commensurated to danger; and sometimes, as Dr. Hall observes, the trachea becomes so violently seized as to deceive a cursory observer into the supposition of actual croup.”—“The attack of the *mimosis urgens* is relieved by *æther. sp. ammoniæ comp.* (arom.) opium, &c.; by stimulating liniments; by fomentation with hot water; and, if necessary, by blood-letting. The prophylaxis consists in removing the original disorder, and especially in the due administration of purgative medicines.”

Under the head of *mimosis inquieta* (the last of our author's divisions) is included, “a continual restlessness; wakefulness; delirium; continued, rapid, and hurried breathing; frequent dry cough; a sense of fluttering and hurry; some spasmodic affections; hiccough; and great frequency of pulse.”—“This state may sometimes be merely the effect of derangement in the digestive organs; sometimes it implies some obscure disease, as its cause; (query, is it then proper to apply the term to the state?) sometimes it arises from the too copious action of a purgative; or from too copious blood-letting; and it is sometimes the precursor of dissolution.” In the first case “a purgative is the remedy on which most reliance is to be placed.”—“In the case of an obscure disease, it is plain that this must be removed before relief can be obtained.”—“In the other cases, the *tinctura opii*, the *sp. ammoniæ comp.* wine; stimulating liniments; proper fluid nourishment, cautiously given with wine; bathing the face with cold water; the effervescing medicine; fanning, and a free air, are the principal remedies.”

We deem the symptoms characterizing this state important to take notice of, both on account of prognosis and practice. It is usually the forerunner of death after protracted disease; and we think it at least questionable, whether, by a bolder and more copious administration of the diffusible stimuli, of wine, cordials, ammonia, &c. the vital principle might not oftener than it is be preserved from sudden extinction.

We now close the little volume, the substance of which we

have endeavoured to present to our readers, with sentiments of much respect for its author. Patience in investigation, and accuracy in distinction, are among the most useful attributes that can belong to a Physician; and these qualities Dr. Hall evidently possesses in no inconsiderable measure.

Minutes of Cases of Cancer, Part II. being further Reports of Cancerous cases successfully treated by the new Mode of Pressure: with some Observations on the Nature of the Disease, as well as on the Method of the Practice. By SAMUEL YOUNG, Member of the Royal College of Surgeons; of the Medical and Chirurgical Society of London; and Surgeon to the Cancer Institution, &c. &c. 8vo. pp. 199. London, 1818.

[From the London Medical and Physical Journal, for January, 1819.]

BUT few medical works of modern production have been more generally read, or excited more attention from surgeons zealously devoted to the improvement of their art, than that of Mr. Young, in which he published the result of his enquiries into the nature of cancer. It is now thirteen years since the appearance of that treatise, and the author again comes before the public, to express his conviction of the correctness of his opinions, to enforce them by further arguments, and to display actual evidence of the efficacy of his mode of treating that formidable disease. The result of so many years' experience, from ample opportunities for observation, of a gentleman of acknowledged candour and considerable talents, has powerful claims on the attention of professors of surgery.

The opinions of Mr. Young have given rise to much discussion, and his mode of treatment has received a rather extensive trial under the direction of other surgeons; the results of which have neither terminated in an acknowledgment of the truth of his theory, nor of the efficacy of his practice. The principal objections to the former are—that cancer is a constitutional disease, or, considering it merely

local, that it is accompanied with *specific* diseased action, which pressure cannot remove; and to the latter—its failure in the cases to which it has been applied. The arguments of Mr. Young, in opposition to the above-mentioned notions respecting this malady, are powerful and well conceived; but as they, we presume, are well known to our readers, and have already been fully discussed, it only remains for us at present to consider “*the method of the practice by pressure.*”

Reflection, alone, would not lead us to form deductions at all satisfactory, even to our own minds, respecting the power of compression for the cure of cancer. Acknowledging the correctness of the opinions of Mr. Young on the nature of the disease, the success of the application of the remedy must appear doubtful in the extreme. Experience, alone, must here be our guide. That it has, under the superintendence of the author, cured many cases of disease, considered as cancer, by surgeons of the first character for abilities and of the most extensive observation, is most satisfactorily evinced; but, when employed under the direction of other surgeons, it has not been equally efficacious.

The powerful evidence adduced by Mr. Young in favour of his mode of treatment, induced the medical officers of the Middlesex Hospital to employ it in the cancer-ward of that institution. The following is the Report of the Medical Committee, appointed to take into consideration the results:

“That eight cases of open cancer (as it is commonly called), and eight cases of the scirrhus kind, have been submitted to the treatment by compression; some of them for several months, and others for a shorter period.

“That, in some of the cases of open cancer, combined with considerable œdema, the pressure was useful in lessening the volume of the tumour; but that it had not, even in a single instance, any salutary influence upon the specific nature of the disease. It frequently gave so much pain that the patients could not, after repeated trials, endure it, under any modification whatever; and often it appeared to hasten the fatal event.

“That, in scirrhus tumours, the disease advanced, ren-

dering extirpation necessary in two instances: in six others, the disease passed into ulceration, assuming the usual malignant appearances, and terminating in death. Two cases still remain under the care of the respective medical officers.

“Your committee, however, although they cannot lay claim to the discovery of a specific, have still the consolation to believe, that they have, in many cases, succeeded in obtaining great alleviation of suffering; such alleviation as might, perhaps, induce some speculative minds, less disciplined by experience, to conclude that they had at length succeeded in discovering a cure for cancer.”*

The above evidence is certainly powerful; but it is by no means decisive, when we consider how impossible it is to employ this mode of practice in the wards of an extensive hospital, with the accuracy and care so insisted on by Mr. Young, as absolutely necessary in order to obtain favourable results.

The ill effects which have been attributed to the use of the bandages are commented on by the author in the following terms.

“Nothing can be more ruinous to the object of this practice than the conversion, by careless or ignorant applications, of the proper pressure, into improper and partial stricture; or, on the other hand, where the diseased part, which ought to be the only one under the immediate influence of the pressure, is left untouched, with all the applications sliding over and rubbing its surface, and consequently producing irritation, while some other point of the body, generally the opposite side under the breast, across the stomach, or the side of the neck itself, is cut, as if by a ligature. These *circumstances* are only *the abuse* of the practice; they ought never to happen, nor do they *ever* occur when the applications are made upon a right principle.

“Some of the most important branches of surgery depend upon the roller; and yet in the first volume of Mr. John Bell’s Surgery, there is an engraving of a gangrenous arm from bandaging. This representation is given, not to show the practical effects of bandages, but to exemplify, on the contrary, the consequences of *their abuse* under mismanagement, where, by

* *Surgical Observations*, by Mr. CHARLES BELL, Part i.

careless or ignorant applications, the very object of their intention is not only perverted but most dangerously reversed. So that in the common use of the roller, in the ordinary duties of the surgeon,—duties by far the most useful, as justly pointed out by that author,—it is seen how easily benefits of the first practical importance, and which are supposed always to be at our command, are superseded by irremediable mischief, in consequence of ignorance or inattention; and precisely may the principle of that treatment, which forms the present object of attention, be so perverted.”

An accurate and neat application of the bandage is, indeed, rarely witnessed in English surgeons; a fault which has called forth the censure of our rivals on the continent; who demonstrate to us the various and beneficial effects of this powerful remedy, which we are obliged to acknowledge, but which, from some cause or other, we can rarely obtain from the same means. In zeal for the improvement of our art, and attention to the comforts of the victims of disease, we certainly are not inferior to the French surgeons; but a desire to effect every thing by general means and bold and decisive measures, makes us too often inattentive to what we consider as trifling circumstances that do not influence general results, but which are in reality the points on which, in many cases, they absolutely depend. The foundation of inability for an accurate application, and want of knowledge of the use of the bandage, is often laid at the earliest period of the education of the English surgeon: he is taught by his instructors to leave it to patients themselves or their nurses, and thus to neglect the use of the most powerful of all instruments in the hands of an expert surgeon, but which requires more dexterity than all the apparatus of SCULTETUS. It is, therefore, not without a blush that we aver, we do not expect to see the hope of general success from the treatment of cancer by compression realized at the present period, although it were actually a remedy for that disease. We fear there are but too many bars to its proving very beneficial to the public, by the obstacles to its use becoming extensive, in the habits and circumstances of medical practitioners in general; the application of the bandage requiring that time and trouble which some may be indisposed to devote to it through disincli-

nation, and others from a real want of leisure; and the instances, we believe, would not be rare where, with neither of these obstacles, the want of adroitness would prove prejudicial rather than useful.

The author has given very full instructions as to the manner of regulating the pressure in applying the bandages, which are too long to detail in this place; and to give detached observations, would not convey to our readers a sufficiently correct idea of it, for practical use; we must, therefore, refer them to the work itself. The description occupies several pages, but does not subject the author to the charge of prolixity: if he has gone into any minute details, it arose from the laudable motive of being desirous to be clearly understood, that the advantages which he supposes his method to possess may be transmitted to others.

The general results of this mode of treatment are expressed by the author in the following terms:—

“The practice by the treatment of pressure, in cancerous complaints, and all states of tumour and diseased enlargement, admitting the application, is seen then to be regulated and intimately connected with the circumstances and nature of the disease, generally and individually. In some cases, a complete removal of all the disease, and restoration of the natural structure, is effected; in others, a thickened state of parts or indolent tumour will remain, after the removal of the more palpable and active disease; while, in other instances, the disease can only be partially diminished and kept at bay by constant resistance from the pressure, reducing the latter cases to the state of a ruptured patient, who constantly wears a truss. And even in this state, as remarked on before, a most evident and important advantage is obtained; since you diminish and keep that at a stand-still, the increase and advance of which forms the extremity of the disease; in which the sufferings, the comforts, and life of the patient are involved.

“Such is the *rationale* of this practice, as confirmed by experience; and which will be generally admitted when the strangeness of novelty is worn off, when the subject is better considered, and the practice more adroitly understood and managed; and especially when a sense of that duty, which looks a little

beyond the present, opens to the mind an uprightness of conduct, and fair dealing shall take place of that policy which, by detraction, perversions, and mis-statement, may obscure and injure, but never can ultimately *destroy*, the ends of truth."

The necessary length of the detail of the cases adduced by Mr. Young, to evince the beneficial effects of his mode of practice, prevents the possibility of our transcribing one or more of them for the information of our readers; but this we the less regret, as we feel convinced that the greater number of them will diligently peruse the work itself. Although they may not then be induced to form expectations of compression being a *cure* for cancer, they must acknowledge that it has stopped the ravages of the disease, even in its most destructive form, and rendered existence pleasureable, which had previously been a mere susceptibility of agony.

Practical Observations on the Nature and Treatment of Marasmus, and of those Disorders allied to it which may be strictly denominated Bilious. By JOSEPH AYRE, M. D. Member of the Royal Medical Society of Edinburgh; one of the Physicians to the General Infirmary at Hull; senior Physician to the Hull and Sculcoates Dispensary; and Physician in ordinary to the Lying-in Charity, at Hull.—8vo. pp. 256. London, 1818. Baldwin and Co.

[From the London Medical and Physical Journal, for March, 1819.]

UNDER the term Marasmus, Dr. Ayre proposes to consider certain morbid conditions, which, according to the predominance of particular symptoms, have, by different authors, been designated under various appellations as distinct diseases. The diseased state originates in disordered function of the digestive system, and leads to that defective nutrition of the body which produces the obvious external character which is here adopted as distinctive of the morbid affection. The author considers the marasmus of children, and the disorder of adults commonly termed bilious, as diseases of the same origin and nature; modified, perhaps, by differences in the system dependent on differences of age and constitution;

and he, therefore, uses these terms indiscriminately, and comprehends under them every form and variety of the complaint. The disease is distinguishable into two stages,—an acute and a chronic one; their separate existence is often overlooked, though tolerably well defined by different symptoms. In the chronic form, there is a morbidly-craving appetite, without much thirst or fever; whilst, in the acute, there is a very marked loss, or an absolute extinction of appetite, with a considerable degree of both thirst and fever.

Dr. Ayre proceeds to describe, with great perspicuity, the symptoms which characterize the progress of marasmus in infancy, in childhood, and in the adult age. They are all indicative of deranged function in some of the chylopoietic organs; but we cannot here detail them. He remarks its frequent resemblance, in children, to the irritation of difficult dentition or of the worms in the intestinal canal, to *tabes mesenterica*, and to *hydrocephalus internus*. It is often confounded with dyspepsia, and the mild hysteria of women, and hypochondriasis of men. In the youth of one sex, it passes under the name of chlorosis; and, in the other, it is frequently denominated a chronic weakness. But the most important diseases which it resembles, and from which it is of most consequence to distinguish it, are the *anasarca* of debility, *phthisis pulmonalis*, and the organic and inflammatory affections of the liver.

It is only necessary to reflect on the importance of the perfect action of the digestive apparatus to the maintenance of a healthy condition of the entire system, to be convinced of the multiplied variety of secondary disturbances which may result from a derangement of the primary action in the series of animal functions. The necessary consequence of a first imperfect action is the imperfection of a second, which stands in the relation to it of effect. But, independently of such concatenation of disorder, which may be shown to be of physical necessity, there exists in the economy of animate beings another pervading medium, through which disturbance is propagated remotely through the system: strike upon the first link of the chain of sympathies, and vibration runs through its whole extension. Hence the varied course which derangement

of function may pursue; and hence the difference of character which disease may ultimately assume. From this source, too, no doubt, has emanated the endless enumeration of diseases which swell the pages of nosologists. We would not be thought to imply that all disease is of one origin, and that this origin is to be sought in chylopoietic disorder; the complex machinery of animal existence is amenable to the influence of many other extrinsic agencies than those which minister to its nutrition, and all of them may prove the cause of some irregularity of movement. Yet we are persuaded, that all of those inlets to disorder, conjoined, form but a trivial proportion to that great avenue, the *iter ad ventriculum*; and we also feel a conviction that medicine has often and long been engaged, and too often worsted, in the contest with affections as of an idiopathic and independent character, which were the secondary, or perhaps more remote, result of derangement introduced into the incipient functions of alimentation.

Dr. Ayre shows, that many of the symptoms assumed as characteristic of original diseases above alluded to, are but the product of disordered digestion; and that they are removable by the means which correct the primary affection. He does not combat the existence of such several diseases; but he makes it apparent that their idiopathic nature is frequently very liable to misconception. The distinctions which the author draws betwixt the fictitious diseases and their prototypes are clear and satisfactory. This diagnostic part of the work is full of interest.

Diseased function may be frequently, and for a long continuance, present, when no lesion of organic structure shall be afterwards discoverable, and the symptoms may be such as to induce a belief that organic disease exists; whence, as the author judiciously remarks, highly pernicious practice may be adopted. Minute and extensive examination has convinced Dr. Ayre that defective action is much more rarely to be ascribed to change of structure in an organ than it is common to suppose. His opinion on this subject, with regard to that important viscus—the liver, does not coincide with that of some of the profession, whose opportunities of

judging have been very extensive. Some valuable observations occur in the consideration of this part of the subject.

“ A considerable number of the symptoms of the bilious affection are produced by the operation of that law of the animal economy which we term sympathy; for beside the general and local disturbance which is observed to arise directly from the disordered actions of the liver and the other chylopoietic viscera, there are several important affections produced through the sympathetic connexion subsisting between these organs and different parts of the system, whereby an irritation, present in the former, is communicated to parts of the body with which they have no local nor apparent relation. Of the effects resulting from the agency of this law, there may be said to be several kinds.

“ The first we may notice is an increased action of the serous and mucous membranes, whereby a larger secretion of their proper fluids, or a morbid change in them, is produced.”

Of the sympathetic establishment of diseased action in these structures, several instances are adduced; leading, in some cases, to partial or general anasarca; in others, to accumulation of serous fluid in particular cavities, and lymphatic depositions in other parts; and, in mucous membranes, to increased action, to purulent secretion, and even to ulcerative process. From the operation of this law, the author deduces the formation of topical, and sometimes formidable, disease, in remote, and frequently important, organs. Hence a frequent cause of difficulty in discriminating betwixt symptomatic and idiopathic disease. On this point the author enlarges to some extent; particularly in treating on the sympathetic affection of the mucous membrane lining the cavities of the respiratory organs. It is of great importance to discriminate betwixt irritation of this nature and the cough of phthisis.

Having treated at some length on the several affections considered as sympathetic, and shown in various instances, occurring in his own practice, their co-existence with biliary derangement, Dr. Ayre proceeds to illustrate the pathology of marasmus by facts connected with the functions of the alimentary canal. The different parts of the digestive appara-

tus have an intimate connexion with each other, by continuity of surface and by nervous intercourse; their severally subservient actions are excited by sympathy, and by the successive application of transmitted stimulant materials. Amongst organs so reciprocally dependent, and so consensaneous in their actions, disorder, in whichever originating, is easily communicated to others of the same system: thus, derangement of the stomach will produce irregularity in the action of the liver; and this latter, disorder in the functions of the duodenum, whence further disturbance is propagated. Thus it seems hardly possible that disorder should occur, however originating, in any part of this system, without the associate organs participating more or less in the morbid affection; and by these means the process dependent on their joint offices is imperfectly performed. It is difficult to determine which of the chylopoietic viscera is, in the disease under consideration, most commonly the first to suffer disorder; but we are enabled to detect the existence of derangement in several of the more important, by an obvious deviation from their accustomed actions. Thus, we observe the stomach craving or loathing food, rejecting the ingesta, or throwing out viscid phlegm or other vitiated secretions. Of deranged hepatic function we have tolerably accurate means of judging, by the appearances of the alvine excretions: in these we observe an excess, a suspension, a deficiency, or an unhealthy state, in the secretion of the liver. These are unequivocal indications of the seat of disorder; and these are commonly present, more or less, in the disease in question. In marasmus, Dr. Ayre thinks that disorder of the liver is rarely absent. In speaking of the derangements of function of this viscus, he is of opinion, that the dark matter which is frequently voided by stool owes its colour to the presence of blood, and that this is effused from the extremities of the minute branches of the vena portarum, in consequence of congestion in this system of vessels. The proof of this state of congestion he draws from various considerations, and he believes it to exist in both the acute and chronic stages of marasmus. It is caused, he says, by suspension of the secretory function of the liver, and is relieved in several ways,—by a restoration of the secretion of bile,

which, when in excess, constitutes cholera morbus,—or by an effusion, from the secreting extremities of the veins, of unchanged blood. To this, the author thinks, is to be attributed the black colour of the motions. This effusion he considers to take place sometimes in large quantity, and, when carried off by the bowels, it constitutes melæna; when it is thrown up by the convulsive action of the stomach, it becomes the disease hæmatemesis. The customary means of relief in these affections coincide with the view which is here given of their origin. Medicines which clear out the contents of the bowels, and promote the healthy function of the liver, relieve the congestive state of its venous system. This opinion of Dr. Ayre as to congestion in the hepatic vessels, is extended to its almost necessary occurrence in the early stage of disorder, wherein the natural action of these vessels is suspended; and he considers it to be almost invariably present as a precursory symptom to more obvious biliary derangement. This forms the main feature in his view of bilious disorders, and gives the bias to his practice; and, perhaps, it would not be easy to refute the author's doctrine. His view of the pathology of marasmus is recapitulated in the following passage:—

“ 1st. That this disorder consists in a deranged and imperfect action in the secretory function of the liver, and a consequent deficient and unhealthy secretion of bile, as is manifested by the alvine discharges not having that colour which is always imparted to them by it, when it is secreted in a healthy state and in the proper quantity.

“ 2d. That this derangement in the functions of the liver commonly arises from a disorder commencing in the stomach; for the function of digestion is performed by organs whose actions, by means of a nervous union established amongst them for this purpose, are rendered accordant and co-operative; the healthful action of the liver depending upon a stimulus imparted to it by the stomach in obedience to this law.

“ 3d. That in certain deranged states, therefore, of the stomach, the precise nature of which is unknown, there is either a morbid or an imperfect stimulus given to the liver, by which its secretory function is impeded, and a bilious fluid produced,

that is deficient in its quantity, and commonly of the morbid kind.

“ 4th. That, as an interruption in the accustomed actions of a secreting organ occasions a congestion of its vessels, the diminished secretion of the bile gives rise to a congestive state of the vena portarum and its branches; and, in some cases, to a similar state in those organs whose venous system is associated with that of the liver.

“ 5th. That, in consequence of those efforts which nature makes to free herself from disorder, this congestive state is sometimes spontaneously removed by a copious secretion of bile, constituting the bilious diarrhœa or the cholera morbus; and that, in other cases, it is temporarily relieved by an hæmorrhoidal flux, or by the discharge of blood from the loaded extremities of the vena portarum; occasioning, in this latter case, and when in small quantities, the black and tar-like, and often putrid and fetid, stools; and, when in excess, the idiopathic hæmatemesis or melæna.

“ 6th. That, whilst this congestive state of the liver produces an assemblage of symptoms resembling in many points the acute inflammation of that organ, it differs essentially from that state in many important particulars. For, in the acute inflammation of the liver, it is the arterial action of the organ that is excited, and the congestion (if the expression be allowable) is arterial; the secretory function of the organ, from its being carried on by a distinct class of vessels, partaking only secondarily and partially in its effects; whilst, in the venous congestion of the liver, consequent upon an interruption in its secretory action, the arterial system of the liver is necessarily but little, if at all, affected; the congestive state of that organ being, in all probability, limited to the vena portarum and its branches.

“ 7th, and lastly. That the indications for the removal of these morbid but dissimilar states will, therefore, necessarily be different. The inflammation in the liver will demand the same treatment which is applicable to inflammation in other parts of the body; for it differs in nothing from that state in them, either in its origin or nature: whereas, in the other disorder, from its having nothing in common with inflammation, it will not, as I have repeatedly found, be benefited by venæsection or

by blistering, and the severe and antiphlogistic regimen; but the principal object to be attained will consist in a renewal of the healthy secretory action of the liver, as it is from the interruption of this, that the congestive state, with its immediate train of painful symptoms, has arisen."

The remote causes which Dr. Ayre assigns to marasmus, are, cold—irregularities of diet—excess in the use of spirits—the impure air of crowded or close situations—certain eruptive fevers—sedentary employments, &c. &c. On each of these he specially dilates; and, in the part devoted to the consideration of irregularities of diet, are introduced some highly valuable observations on the dietetic treatment of infancy, which, in the hands of ignorance and depravity, is so commonly productive of disease and death. The very flagrant violation of the plainest dictates of nature, committed in the mismanagement of infants, almost from the moment of their birth, amongst the uninformed, must be familiar to the notice of every practitioner in the crowded haunts of man. These abuses the author takes an opportunity of exposing, and of justly reprobating; and we cannot but regret that his remarks on this subject should not have a wider range than the circle of professional readers will afford to them.

In the treatment of marasmus, Dr. Ayre lays down these general indications of cure:—1st, to correct the disordered action of the liver, and remove the congestive state of that organ; 2d, to cleanse the bowels of their morbid secretions, and the imperfectly-digested matters collected there; and, 3d, to lessen or avoid all those causes which tend to aggravate the complaint.

The two former of these indications call, of course, for the exhibition of medicines of the purgative class: but, of the agents of this order, he considers none so immediately adapted to fulfil the first intention as calomel, and that given in very minute doses. The doses, indeed, used by Dr. Ayre are so small as almost to appear inadequate to the design; but against the evidence of facts it is vain to reason, and the author says he finds his practice almost invariably successful. To the submuriate of mercury, given in such quantities, the author ascribes, not only a power of exciting the biliary se-

cretion when suspended, but of reducing it to a healthy proportion when in excess. Thus, he finds it equally serviceable in bilious diarrhœa or cholera morbus, as in those states of disorder where the bile is either not poured out or secreted in sufficient quantity. Keeping these properties in view, this medicine is not given in doses to excite purging, but is made to precede, in very minute and divided quantities, the exhibition of medicines for the avowed purpose of clearing out the bowels. Dr. Ayre cautiously avoids giving the calomel so as to affect the mouth, diminishing the quantity or frequency of the doses, and keeping an open state of the bowels by aperients. Of the last mentioned class of medicines, a preference is given to the neutral salts, as, in evacuating the contents of the intestines, they at the same time increase the secretions of their surface. But these purgatives are not exclusively used, as the author says it is often useful to act upon the different portions of the intestinal tube. Purging is not considered expedient in marasmus; but, when the morbid accumulation of irritating matter has been dislodged, a regular state of evacuation must be maintained. An emetic in the commencement of the attack is often serviceable; in the latter stages it is rarely useful. But we cannot follow the author through the whole of his curative views: suffice it to say, that they are characterized by sound judgment, raised on principles derived from rational deduction, and confirmed by the convictive test of experience.

General reflections on Fistulæ, and on the Formation of an accidental Membrane in their Course; followed by some Observations collected from the Clinical Lectures of Professor DUPUYTREN on the different Species of Maladies of this kind, and on the particular Mode of Treatment adapted to them. By M. BRESCHET, Prosector to the Faculty of Medicine of Paris, and first Clinical Assistant at the Hotel Dieu.

[From the London Medical and Physical Journal for March 1819.]

WE passed over this Memoir in our History of the Progress of Medicine, from the consideration that it comprised but lit-

the information of absolute novelty; but, on further reflection, we have judged that it may prove useful to many of our readers, as a developement of some opinions advanced by Mr. HUNTER, which do not appear to have been sufficiently reflected on by surgeons in general.

“The term *fistula*, in its more general acceptation, designates a *deep sinuous ulcer, with callous edges, communicating with the external surface or an internal cavity by means of a narrow opening; and from which a quantity of purulent matter is evacuated disproportionate to the extent of the ulcer.* As soon as matter of any kind, whether a recrementitious, excrementitious, or gaseous, fluid, from causes which it is unnecessary to consider in this place, happens to desert its natural course, the tissue in which this matter is diffused becomes the seat of inflammation. This inflammation is violent in degree in direct relation to the more or less irritating qualities of the fluid, and the excitability of the parts with which it has accidentally come into contact.

In consequence of the irritation produced by the presence or passage of this fluid or gas, which acts as a foreign matter, suppuration in the parts subject to its influence becomes established. The abscess opens sooner or later, either externally or into an internal cavity, according to varieties in the natural efforts or the artificial measures that have been employed. The purulent matter evacuated always presents some of the characters of the liquid that determined its formation, which escapes in combination with it, in a greater or less quantity. The continual passage of these fluids produces, in the surfaces of the artificial passage thus established, a permanent irritation that is sufficient to prevent the cicatrization of its parietes.

The presence of an animal fluid in any part not destined by nature for its reception, is then the cause, both of the establishment and of the perpetuation of fistulous canals.

We shall not be surprised at such a result, if we reflect that milk, a fluid apparently so mild and incapable of producing irritation, induces violent inflammation, often terminating in suppuration and even gangrene, when it is injected into the interstices of the cellular membrane. Thus, a substance which, when applied to the mucous membrane of the digestive organs of a

infant, only causes the degree of irritation necessary to affect its assimilation, becomes, in a part, the sensibility of which has not a due relation to its properties, an active morbid cause, in consequence of the extreme degree of irritation that it provokes.

There is no tissue nor organ of the animal economy, in the substance of which fistulæ may not be found. Thus, we have seen them traverse muscles, aponeuroses, and tendons, as well as the cellular and cutaneous structures. The viscera are not exempt from them; we frequently witness them in the parenchymatous organs, and occasionally in the brain.

It is, however, the cellular tissue, in which they are most frequently observed, either in consequence of the ready passage it affords for liquids, or from the general distribution of this structure throughout the body. This tissue is, indeed, universally diffused; it is interweaved throughout every part, and enters, as an element, into the composition of every organ. In some instances, it serves as a medium of connexion between several other tissues, which by their union compose a single organ; in others, it establishes limits to the respective viscera, muscles, &c. and supplies them with particular or common envelopments. It is very abundant about the excretory canals, around which it forms cellular sheaths; and presents varieties in its particular texture according to the functions it is designed to perform. For instance, were fat to accumulate in the vicinity of the mucous canals, it might lessen or totally obstruct their passage; and therefore it is of a filamentous texture in those situations, not having that degree of laxity which admits of the accumulation of animal oil in its interstices. In consequence of such a disposition, that tissue favours the formation of excretory canals, and does not offer obstacles to their dilatation.

As soon as an animal fluid, having deserted its natural course, becomes accumulated or passes into this tissue, all the phenomena ensue that accompany the irritation which we have described. But this irritation also causes a remarkable change in the nutritive functions of that structure; the surface of it which is in contact with the effused fluid becomes converted into a membrane very analogous to the common mucous membranes.

After the irritation has existed for a considerable period of time, and has attained a greater degree of intensity, it also induces a further change in the accidental membrane we have described, which possesses that character ordinarily termed *callosity*.

According to Dr. BAILLIE,* the celebrated HUNTER long since observed, in his *Surgical Lectures*, "that the internal surfaces of fistulæ have an appearance similar to that of a secretory membrane, and which may be compared with that of the urethra.† This important observation seems to have had little influence on the minds of practitioners for a considerable period; but the great progress that has been lately made in pathological knowledge, and the frequent opportunities of examining dead bodies, have verified and generalized the proposition of the English anatomist."

I shall adduce the following as one among the numerous facts which tend to substantiate the above statement:—

A young man, 20 years of age, had for some days perceived an indolent fluctuating tumour in the left groin, without discoloration of the skin, which disappeared after he had remained for some time in the horizontal posture. It was evidently a collection of matter transmitted to it from some other part. It burst spontaneously, giving exit to a considerable quantity of fetid purulent matter. The pains which the patient had suffered about the vertebræ, before the formation of the tumour in the groin, and which continued after it had opened, with the nature of the matter evacuated, clearly pointed out the primary disease to be caries of the vertebræ. The patient lived about two months after this time. The following were the appearances noticed on the examination of the body:—The lower dor-

* See his *Morbid Anatomy*.

† "We find something analogous to this in the *Treatise of Mr. Hunter on the Blood, Inflammation, and Gun-shot Wounds*; but there is a wide difference between a mere assertion and the demonstration and complete history of the organization of a part. However, we shall transcribe the passage referred to:—

"I believe that a deep wound, such as that from a gun-shot, on proceeding to suppuration and forming a fistulous ulcer, becomes in some degree analogous to an excretory canal, having the power of producing peristaltic motions from the bottom to the external opening."

sal and two upper lumbar vertebræ were in a carious state. A membranous canal, about an inch in diameter, extended from that part to the opening in the groin, the internal surface of which was a bright red colour. Blood could be squeezed from it by pressure, the same as from a mucous membrane in a state of irritation. The surface of this canal was covered with purulent matter, which was furnished both by the parts about the carious bones and its own internal membrane, that was irritated by the constant passage of the acrid purulent matter from the former source. It was easy to separate the artificial membrane which formed this surface, in the same manner as the internal membrane of the stomach may be rendered distinct, by dissection.

From the preceding observations, and other analogous considerations, it would appear that there can be no doubt respecting the nature of the adventitious membrane formed in fistulæ. If we now revert to the general theory of fistulous passages, we shall be obliged to admit, that the present state of our knowledge of pathological anatomy would lead us to consider these diseases as dependant on the formation of an accidental tissue, which, by its organization, properties, and functions, has the strictest analogy with the natural mucous membranes.

Let us, then, enter into a general consideration of the seat, developement, organization, properties, and functions, of this adventitious mucous structure.

1. It has been seen that fistulæ may be formed in all the different tissues of the animal economy, but that they most frequently are seated in the cellular membrane, which is that most extensively distributed throughout the body. This membrane is found thickly dispersed about the margin of the anus, in the perinæum, around the stenoid duct, &c.; which are the situations where fistulous ulcers most commonly appear.

2. The formation of the adventitious mucous membrane takes place, with more or less rapidity, in a direct ratio to the greater or less violence of the irritation of the tissue throughout which the extraneous fluid is diffused. The irritation is, however, not proportionate in extent to the apparent properties of the effused fluids; and it also varies in consequence of the different degrees of susceptibility of the parts affected.

The cellular membrane, in all cases, assumes in the first instance an ulcerated aspect, and furnishes a greater or less quantity of purulent matter. After this, it gradually evinces some peculiar character. It becomes red, in consequence of increased vascularity; its vital properties are exalted; the nutritive functions of the parts are changed; its density is augmented; and, finally, its appearance has become entirely changed. By means of these successive modifications, it assumes the state of a red villous membrane; differing not only from the cellular tissue, which is arranged in an areola; and the serous membranes, which are diaphanous and constantly disposed in the form of close pouches; but also from all the other species of structure that enter into the formation of the animal economy. In proportion as it is developed, it becomes more and more similar to the mucous membranes. The pus furnished by its internal surface is succeeded by a mucous secretion, which is more abundant as the new membrane produces less of purulent matter. A period at length arrives when it ceases to form the mucous secretion, which may be readily discovered by preventing the fluids that originally induced it from passing through the canal that it forms.

This canal, by means of its internal surface, is connected with these fluids, and the mucus secreted by the adventitious membrane; on its external surface, it forms a boundary to the surrounding parts, from which it is, however, separated by a layer of cellular membrane that varies in point of thickness. Superiorly, it commences from a natural excretory orifice, or some surface presenting the conditions proper to constitute a fistulous ulcer; and, lastly, constantly terminates inferiorly on some one of the cutaneous or mucous surfaces.

3. The organic elements of the adventitious membranes of fistulæ have the greatest analogy with those of the mucous membranes. This membrane is separated from the surrounding parts by a greater or less extent of cellular tissue, which may be termed *sub-mucous*; and it contains a portion of that structure in its composition, as may be demonstrated by maceration. Its redness discovers the presence of a large quantity of blood-vessels that terminate on its surface by exhalants, the existence of which is shown by the secretion of fluids. Since

nutrition is performed in this membrane, we cannot doubt that it contains absorbent vessels. But it is only by means of new researches that we shall be able to determine, in a precise manner, the respective proportions of the different vessels that enter into its composition.

Notwithstanding these traits of analogy, the adventitious membranes of fistulæ differ from the natural mucous membranes, in so remarkable a degree, as to prevent the admission of their perfect identity.

In the first place, the adventitious membrane wants that cuticle that is observed on the exposed surfaces of the mucous membranes of the lungs, digestive organs, &c. Besides which, it does not contain those glandular bodies termed *mucous follicles*, that are dispersed throughout the primitive mucous membranes, and secrete a viscous fluid destined to lubricate their surfaces.

These are not the only differences of organization noticed by the attentive observer between the accidental and natural mucous canals. There is a constant tendency to the obliteration of the former, as soon as the passage of the fluid through them is intercepted; whilst in the latter, under similar circumstances, such an occurrence is never, or very rarely, observed. For example, compare an old fistula, of whatever kind, provided it is still susceptible of being cured, with what is observed in cases of preternatural anus, and these different results will be very evident. We shall sooner or later succeed in effacing a fistulous canal, after having diverted from it the passage of the fluids by which it was produced, the effecting of which, we may observe, in passing, is the basis of the treatment of those diseases; but, in the preternatural anus, on the contrary, although the whole fæcal matter may pass through the accidental opening, the inferior part of the intestinal canal does not become obliterated, but continues to furnish a greater or less quantity of mucous matter.

This difference with respect to the facility of obliteration of canals formed by accident, and the almost constant impossibility of effecting it in those which are lined with natural mucous membranes, shows what little expectation should be formed of the permanence of canals formed in these tissues; and how

preferable are natural to artificial views in the treatment of those parts: that is to say, those which re-establish the primitive course of fluids, to those which effect new and artificial modes of transmitting them. It is in consequence of this, that passages formed through the prostate gland, by means of conical sounds, only remain as long as they are kept open by the presence of the instrument. It is from this, also, that practitioners have ceased to employ the methods of Woodhouse, Hunter, Monro, &c. for the treatment of fistula lacrymalis, and adopt that by which they endeavour to restore the natural passage of tears. However, nothing is more common than to witness the return of that disease, when it has been supposed to have been cured by a long-continued use of tubes, bougies, &c. but this arises from the disorder, in these cases, depending less on a contraction of the soft parts, or excretory ducts, than on that of the hard parts surrounding those passages. What proves this is, that the insertion of metallic canulæ, which offer more resistance to the bony parietes than the mucous membranes, is sufficient for a prompt and radical cure of a malady, too often rebellious to all the efforts of the most able surgeons, before they had recourse to canulæ that were permitted to remain in the parts, the advantage of which were long since pointed out by M. Dupuytren; and by means of these he has cured many hundreds of cases, for which all the ordinary methods had been employed in vain.

4. The vital properties and functions of the adventitious membrane formed in fistulous passages, much resemble those of the tissue to which we have compared it with respect to its organization. This membrane possesses various degrees of sensibility. Sometimes the introduction of a probe or sound into a fistula is productive of severe pain; whilst, at others, the presence of those instruments is more readily borne. We have observed that this membrane secretes a mucous matter, which at first is mingled with pus, but afterwards flows away perfectly pure; and finally ceases to be secreted, if we divert from it the fluid or other matters that had induced it: were it not for this, we could not hope to effect the obliteration of the fistulous canal.

After having given a rapid, though exact, history of the in-

ternal membrane of *fistulæ*, it remains for us to ascertain, more correctly than we have hitherto done, the nature of the *callosities*, the production of which we have attributed to the permanence of the local irritation, kept up either by means of the fluid that constantly passes over the membrane, or by various external causes,—such as certain topical applications, exercise on horseback, in cases of *fistulæ* about the anus and urinary passages, &c.

These *callosities* have a whitish appearance, and seem to be the result of congestion or colourless fluids in the membrane and subjacent cellular tissue. Formerly they were considered to be of a scirrhus, or even cancerous, nature; and these erroneous notions gave rise to injurious measures in the surgical treatment of this disease. Experience has shown, that rest, emollient applications, and appropriate dressing carefully applied, will, in the greater number of instances, effect their removal. According to the present received ideas respecting cancerous affections, and the treatment that should be opposed to them, it will be readily perceived that they differ in every respect from the *callosities* of *fistulæ*.

By a judicious use of the measures I shall presently point out, we may almost always spare the patient an operation, which, although generally exempt from danger, is productive nevertheless of severe pain, and frequently gives rise to very unpleasant consequences. I allude to the treatment of *fistula* by extirpation, a cruel operation no longer practised, or at least only adopted in places remote from the centers of acquisition in knowledge, and by persons governed by prejudices, or ignorant of the progress of the art of surgery.

A simple operation is now generally substituted in the place of extirpation, which is executed in various ways, subordinate to accidental circumstances and the particular inclinations of the surgeon. These consist, in all cases, in re-establishing or dilating the natural passages, in dividing or compressing the fistulous canal throughout its whole length, so as to give a free issue to the pus, and to oppose the passage of liquids, aëriform matters, or fluids, in the accidental canal; the bottom of which should be the first part that should become united. They have also another object; that of removing external extraneous sub-

stances, and favouring the separation and entire removal of those formed in the diseased tissues.

Fistulous passages differ considerably, according to the laxity, organization, and nature, of the cellular tissue in which they are developed; they vary also in the disposition and direction which they assume. Thus, they do not always extend in a right line; and often form numerous sinuses, terminating in more extensive cavities. The accumulation of fluids in the latter gives a complicated character to the disease, and renders the treatment of it tedious in consequence of the difficulty experienced in the discovery of these cavities, and the means of arriving at them. These complications depend on the same causes as the principal disease. The retained fluids, also, according to their nature, are productive of inflammation, and the numerous and various consequences that the practice of surgery daily offers to our observation.

We may, I believe, conclude from what has been stated—

1. The fistulæ are accidental canals, kept up by the continual passage of excrementitious substances, purulent matter, the liquids coming from secretory organs, or gaseous fluids, which produce irritation of their surfaces and prevent their adhesion.

2. That one of the extremities of fistulous passages constantly receives or produces the cause of the irritation that perpetuates their existence.

3. That it is to the knowledge of this cause that the practitioner should direct his attention, if we would employ a rational and efficacious mode of treatment.

4. That there is always the formation of a tissue of a particular nature in fistulous passages, more analogous to the mucous membranes than any other species of structure.

5. That, in some cases, this tissue is the only existing organic alteration; and this is what is commonly observed in simple fistulæ.

6. That, in many other cases, there exists at the same time a degeneration of the cellular structure and adjacent parts; a degeneration which we should be careful not to consider as the cause of the fistula, nor to confound with schirrous, cancerous, or carcinomatous affections, from which it essentially differs.

7. That the removal of the parts thus degenerated will not

remedy the cause of the fistula, it only destroys one of its effects that would generally disappear spontaneously after the cause of it had ceased to exist.

8. That the indications for the treatment of this malady are to prevent the formation of pus, or at least the flow of it through the fistulous passage; to re-establish the course of the fluids or secretions through their natural channels; and to prevent the escape of air by the opening that communicates with one of the extremities of the fistula.

9. Lastly, that, after the causes are removed, we may obliterate the fistulous passage, by dividing it throughout its whole extent; by the use of compression; or by exciting, by means of caustics or irritating injections, such an inflammation of its parietes as may induce their mutual adhesion."

ORIGINAL PAPERS.

Observations on the efficacy of the SCUTELLARIA LATERIFLORA. or Scull-cap, as a preventive in Hydrophobia. By JOHN VANCLEVE, M. D. of Princeton, New-Jersey.

TO THE EDITORS OF THE ECLECTIC REPERTORY.

Gentlemen,

THE melancholy cases of hydrophobia which have recently occurred in Philadelphia, I trust, will be deemed a sufficient apology, for the following communication on the efficacy of the *Scutellaria Lateriflora*, or scull-cap, as a preventive in that disease. The late Doctor Henry Van Derveer, senr. of Somerset county, New-Jersey, as is well known, has been long celebrated for the prevention of canine madness arising from the bite of rabid animals. I have not been informed that the Doctor ever wished to keep the remedy which he used a secret, but, be this as it may, it is certain, that long before his death, he made it known, expressed his entire confidence in its efficacy, and his great solicitude that its use might become general. The following extract of a letter from his son Doctor Henry Van Derveer, junr. shows the length of time and success with which his father had used it. "This plant, *Scutellaria Lateriflora*, has been used by my father as a preventive of hydrophobia ever since the year 1770 or thereabout, and I believe with uniform success, with the exception of the case of a young woman near Rahway, which was so far advanced, as in his opinion, to preclude all human aid. During his life, he had the happiness to administer it to near four hundred persons, and also to a great number of animals, the latter of which were frequently made the subject of experiment. His confidence in its efficacy was as perfectly established, as the nature of the subject would admit. A number of years ago he was applied to by a person of the name of Lewis, of New York state, to whom he

communicated a knowledge of the weed, and in all probability, this is the man of whom mention is made in the New York Medical Repository. In what way my father became acquainted with it, I am unable to say. His manner of using it, was to infuse half an ounce of the powder in a pint of water, to be taken through the course of twenty-four hours, and to be repeated for five or six days in succession, with low diet. I am extremely anxious that the public should be made acquainted with it, if it can be done in a manner that will command their attention and confidence. That this will be the case, there can be little doubt, if the new Pharmacopœia should be completed, and if it should be thought proper to make mention of it. It will thus become subject to the test of further experience, and that it may be found equally to succeed will surely be the wish of every person who has the interests of humanity at heart."

After my appointment by the Medical Society of New-Jersey, to attend the Convention which was to meet in Philadelphia for the purpose of forming an American Pharmacopœia; I addressed letters to several gentlemen, for information respecting the medical properties of certain plants, of which I had no practical knowledge. The letter of which the above is an extract, is dated 24th of May last, and was written in answer to one directed to Doctor Henry Van Derveer, on the subject of *Scutellaria*.

From this extract, it appears, that Dr. Van Derveer, senr. had used this herb as a preventive of hydrophobia for about forty-five years before his death. This event took place in Nov. 1815—that the Lewises of the state of New York, in all probability, obtained their information on this subject from him, notwithstanding what is said in the 14th Vol. of the New York Medical Repository to the contrary—that if there be any virtue in the plant, and if any credit be due, the person who first introduced it into practice, Dr. Van Derveer, is, beyond dispute, exclusively entitled to it. Dr. V. was a respectable physician, a man of unblemished character and of unquestionable veracity. Whatever he may have said respecting the medicinal properties of the *Scutellaria*, was doubtless from his own conviction of its correctness. That he had great experience in the efficacy of the *Scutellaria*, is proved, not only from the letter

above recited, but from the numerous instances which now could be adduced, if it were necessary, in which its timely administration had, to all human appearance, prevented the disease. A few days since, I had an opportunity of conversing with, and making enquiries of some respectable members of the bar and judges of the court in the county of Somerset in this state, gentlemen who had been personally acquainted with the late Doctor Van Derveer; they gave decided testimony in favour of his character and of the correctness of his former statements on the efficacy of the *Scutellaria*. Some of them had witnessed its successful administration in several instances, and the fatal consequences of the bite by the same animal when it was not administered.

I am far from believing that the disease would have taken place in every instance in which the *Scutellaria* was used as a remedy, although it had not been administered; nor do I suppose that the Doctor believed it. But is it not rational to conclude, that the disease would have occurred in many instances, out of the near four hundred persons, to whom this medicine had been given, many of whom were known, and all it was believed, had been bitten by rabid animals? In a variety of cases it can be proved to entire satisfaction, that a dog afflicted with rabies, had bitten a number of domestic animals—that every one fell a sacrifice to the disease that did not take the medicine, and that every individual that took it survived. That Dr. V. had more experience in the efficacy of the *Scutellaria*, than other physicians, is doubtless a fact, and can readily be accounted for. He had used it near half a century: the knowledge of his success was extensive not only in this, but in the neighbouring states. It was not uncommon to have applications made to him by persons residing at the distance of twenty, thirty, and I have reason to believe in some instances, of more than an hundred miles.

I wish to be understood, that I have no practical knowledge of the alleged virtues of the *Scutellaria*, having never seen a case of hydrophobia in a human subject, and not more than four or five in animals, and these in the advanced stages of the disease. But the instances in which it appears to have been successful, are so numerous and so well attested, that a man must

be a sceptic indeed, if, after having been informed of them, he did not believe, at least so far, as to make it an object of serious enquiry. My object in this communication is to bring the subject again before the public, that medical men may be induced to subject the above mentioned remedy, to that patient and impartial investigation which a disease so awfully distressing, and hitherto so fatal, demands, and which the honour of the profession requires. I am the more desirous to do this, because the profession has been censured, and justly too, for the extreme indifference with which remedies proposed for diseases esteemed incurable, are usually received. It is true, the public is often imposed upon by the nostrums and panaceas of ignorant pretenders to medicine, which it must be acknowledged, to a certain extent, is an apology for the doubts and suspicions of a liberal profession. But men of high attainments, whose minds are enlarged by science, ought equally to avoid the extremes of weak credulity, or of obstinate doubt. Stubborn, unyielding scepticism, is no more to be tolerated in medicine, than in religion. If absurdity is stamped on the face of a remedy, let it be treated with contempt, but if it be doubtful, let cool, dispassionate, but persevering enquiry be resorted to, and experience will lead to truth.

It should be remembered, that it is the *Scutellaria Lateriflora* which was used by Dr. Van Derveer. It is described by Dr. Jacob Bigelow in his *Florula Bostoniensis*, and by Pursh in his *Flora of North America*, and is the first species in each work described under the genus *Scutellaria*.

I am, Gentlemen, with respect,

Your obedt. servt.

JOHN VANCELEVE.

Princeton, July 7th, 1819.

FOR THE ECLECTIC REPERTORY.

Case of Intussusception.

BY RICHARD HARLAN, M D.

I have been induced to offer the following case for publication; as it showed some peculiarities both in the symptoms, and in the parts affected by the disease.

On the first of May, 1819, I was requested to visit a child aged five months: I found her very restless, though there was no expression of acute pain;—the tongue was white and furred;—little or no fever; and, on pressing the abdomen, there was no indication of increase of pain.

Previously to my visit she had taken four grains of calomel, a quantity of the oleum ricini, and an injection of infusion of senna: but from the excessive irritability of the stomach, which was one of the earliest symptoms in the disease, the greater part of the medicines were thrown up.

I directed five grains of calomel, made into two pills, to be taken immediately; and one hour afterwards, to take a dessert spoon full of the oleum ricini every two hours; also an injection of turpentine—*made of half a drachm of the oil beat up with the yolk of an egg.*

At 10 o'clock P. M. I found the irritability of the stomach allayed, so as to enable the patient to retain the oil, of which she had taken, altogether, two ounces;—not the least discharge had been produced, per anum:—the enema came away immediately; the restlessness and anxiety were somewhat increased; she rolls her head frequently from side to side; refuses the breast; tosses her limbs in every direction: her eyes look brisk and animated, seldom cries out as if in acute pain; she still makes some efforts to vomit, though nothing comes off the stomach. I directed the oil and injection to be continued, and sinapisms to be applied to the feet.

May 2d—Her bowels have remained obstinately constipated. I was informed that irritability existed about the fundament, which was communicated to the bladder, producing strangury: her eyes yet retain their lustre: throughout the disease, from my first attendance, the patient has neither manifested acute pain, nor fever; at least in the usual manner.

On examining the fundament, we observed what I took to be an inversion of the rectum; which protruded nearly an inch beyond the verge of the anus every time the patient strained; to alleviate tenesmus, I directed an anodyne injection consisting of laudanum six drops, olive oil two ounces; the terebinthinate enema was omitted—the oleum ricini had remained up—

on the stomach, and was continued: and leeches were directed to be applied to the verge of the anus.

I called at 12 P. M. with a view to order a warm bath, but found the patient “in articulo mortis”—she died after a few slight convulsions.

Dissection.

I examined the body in the presence of Doctor Lawrence—on opening the abdomen we were immediately struck with the size and position of the colon, which appeared as if distended with fæces of a black colour, extending no further than the left hypochondriac region, where an intussusception was evident.

The better to investigate the nature of the case, we passed a ligature around the œsophagus and dissected out the whole alimentary canal:—We found the intussusception to commence, in that portion of ileum just before it enters the caput coli, but instead of entering, as usual, in the right iliac, it was found in the left hypochondriac region.

The parts involved in the disease were as follow: about one inch of the ileum, the whole of the cœcum, with a portion of the colon were received into the remaining portion of the colon: The intussuscepted portions of the cœcum and colon were of course inverted.—The cœcum had descended into the rectum; which gave to the latter the appearance of a bowel distended with hardened fæces, whereas there was not more than half an ounce of fœcal matter in the whole extent of the colon, and that was of a fluid consistence.

The cœcum was thickened from inflammation; and its inner surface, together with a portion of strictured colon, was in a state of gangrene. It was this hardened, tumefied, and inverted cœcum which had descended beyond the verge of the anus during the act of straining, and which I before mistook for a prolapsus of the rectum; but as only a small portion, comparatively, of the colon, was intussuscepted, its remaining portion was consequently thrown into a number of folds over the inverted portions of intestine. The annexed sketch may serve more clearly to demonstrate the size and appearance of the diseased parts.

The adhesions which, in a natural state, confine the cœcum

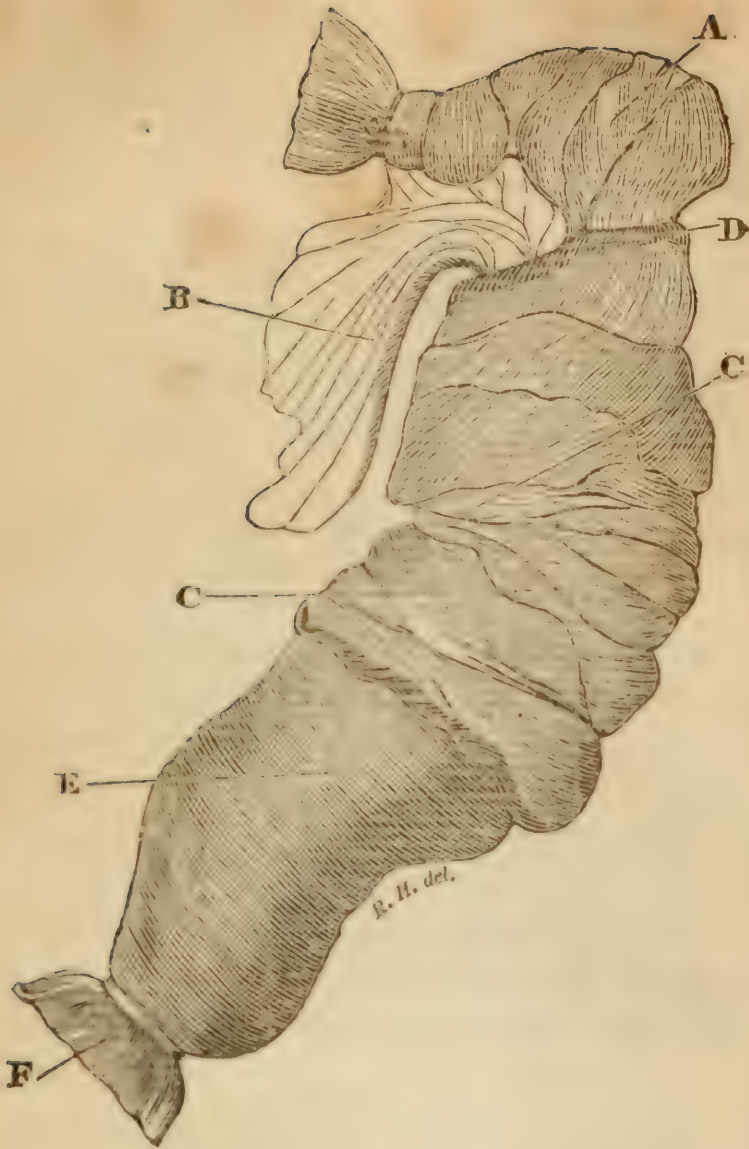
in the right iliac region, must in the present instance have been considerably stretched, or torn; but it may be remembered that in subjects of this age, they are slender and elastic.

Had the precise nature of this case been known, it would have been impossible to have overcome the obstruction by any mechanical means, as, after the parts were taken out of the body we were unable to dissolve their connections without laceration—after such separation, however, we were enabled to produce an artificial intussusception precisely similar to the original.

All the remaining abdominal viscera were in a natural state. In the ventricles of the brain we found much more water than usual; of which there was no characteristic symptom during life, unless the motion of the head from side to side be peculiar to it.

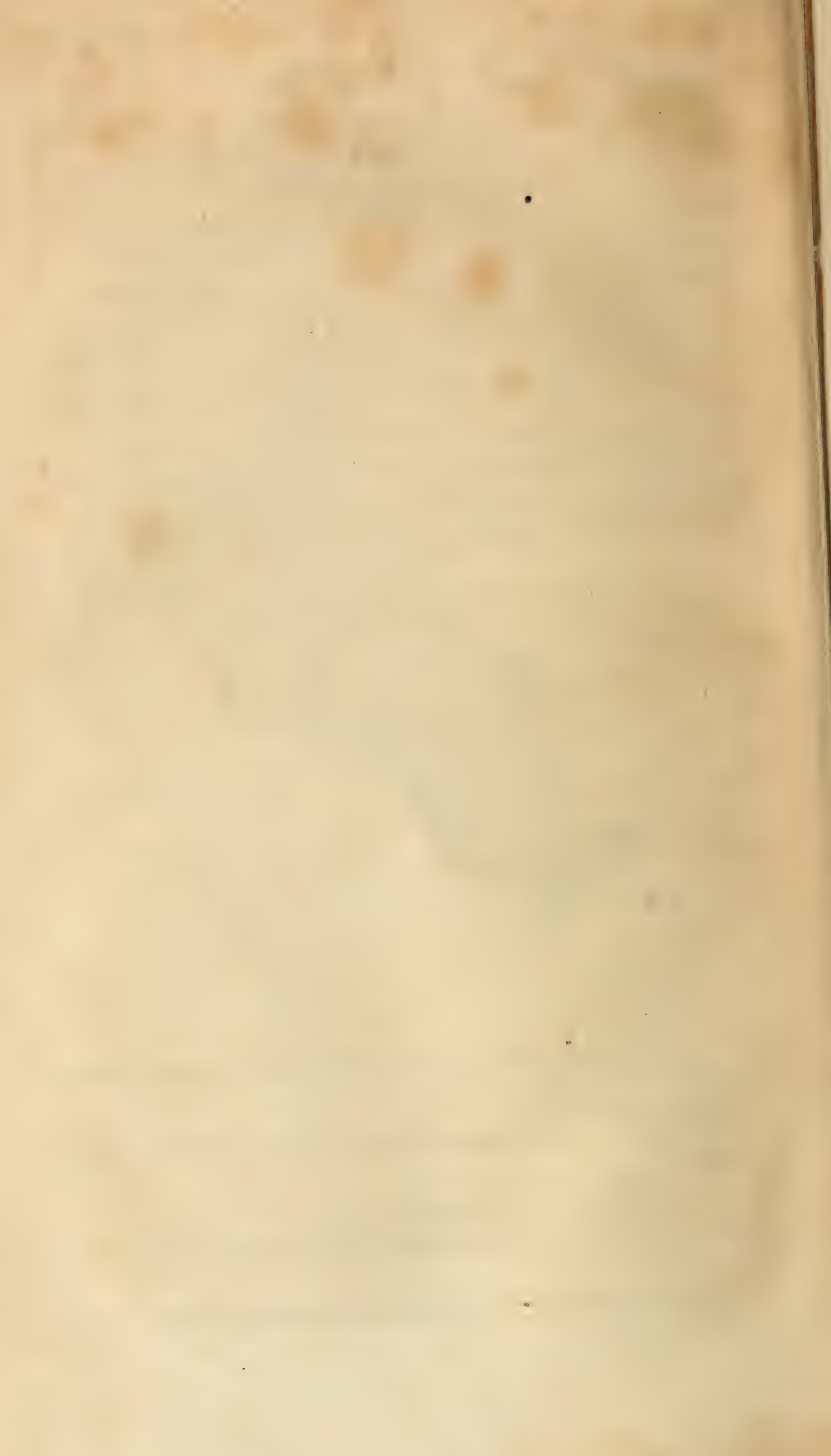
I may here remark, that in the course of my dissections I have found serous effusions into the ventricles of the brain when obstinate constipation of the bowels was the idiopathic disease, and symptoms of effusion, if any had occurred, were only secondary or symptomatic; and “vice versa.”

July 14th, 1819.



- A. A portion of the Ileum, just before it enters the Cæcum; distended with flatus, fluids, &c.
- B. The Mesentery.
- C. A portion of the Colon folded over the intussuscepted Cæcum and Colon.
- D. The place of stricture.
- E. The Rectum, which contained the Cæcum.
- F. The Rectum cut off about an inch and a half within the Anus.

The above figure is one third less than the natural size.



Case of Varicose Swelling of the Labia Pudendi.

TO THOMAS C. JAMES, M. D. *Professor of Midwifery.*

Boston, May 5th, 1819.

DEAR SIR,

IN consequence of the acquaintance I formed with you, in my late visit at Philadelphia, I have taken the liberty to relate a case which has come under my care, since my return, which is not only novel in my practice, but which I do not recollect of having met with in any medical work.

CASE.

I was called to a young married lady in about the fourth month of gestation with her second child, who complained of pain in the labia pudendi. On examination, the left internal labium was found to be particularly enlarged; and it was presumed, that an inposhumation, to which females are liable during pregnancy, would be the result of the affection. The use of laxative medicine, the application of emollient cataplasms, and the observance of an antiphlogistic regimen, were directed. Not finding these remedies to have the desired effect, recourse was had to a more attentive examination, when the most satisfactory evidence was obtained that the enlargement and pain of the labia arose from a varicose state of the veins.

Symptoms.

The symptoms were as follow; pain, increase of size and considerable sensibility; on the application of compression the labia were diminished, but on the removal of compression they immediately recovered their usual dimensions; the pain and tumefaction were augmented, in the latter part of the day, by an erect posture, and after much exertion.

A person conversant with varicose veins of the testicle, especially of the spermatic cord, would experience no difficulty in discovering a most striking resemblance between the two diseases, merely by tact. It was, indeed, by this test only, that a correct diagnosis could be formed. The state of the disease could not be discovered, as in some cases, by the external ap-

pearance, nor were the veins in the pelvic extremities and about the hypogastric region, varicose.

Cause.

The cause of the disease may be attributed partly to over-distention during her first labour, and partly, perhaps chiefly, to the officious interference of a young and inexperienced accoucheur.

Remedies.

It was recommended, that the parts should be supported by the application of a compress and the T bandage; but, owing to the inconvenience of applying it, it was omitted, and a bandage was adapted to the hypogastric region in such a manner, as to sustain the weight of the fœtus. In this way, the obstruction to the return of the blood through the iliac veins was removed, the turgid state of the varicose veins relieved, the pain alleviated, and the tenderness and tumefaction diminished. In addition to the above remedy, the frequent use of brandy diluted with water, applied cold, was recommended. It is perhaps, scarcely necessary to add, that my patient is so far recovered, as not, at present, to require medical attendance.

I am, with sentiments of respect and esteem,

Your obedient servant,

WILLIAM INGALLS.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

AMERICAN PHARMACOPŒIA.

[From the Philadelphia Register.]

THE Convention of the middle states, for the formation of a National Pharmacopœia, met on the 1st instant, in the chamber of the College of Physicians of Philadelphia. During the session, the several articles of the *Materia Medica*, and their preparations, were individually considered, and such selection made as was deemed most proper. This Convention closed its session, on the 4th instant, by the appointment of the following delegates, to represent the middle district, in the general Convention, for the formation of a Pharmacopœia, and system of Medical Ethics, adapted to the United States, to be held in Washington, on the 1st of January, 1820.

Doctors, Samuel L. Mitchill, Alexander H. Stevens, Lyman Spalding, John Watts, Jr. of New York; Thomas Parke, Thomas T. Hewson, of Philadelphia; Allen M. Lane, Wilmington, Delaware; Elisha D. Butts, Samuel Baker, of Baltimore; Henry Hunt, of Washington, D. Columbia.

It is hoped that the practitioners of medicine, residing in the middle states, who are acquainted with the virtues of the American plants, will communicate such information, to some of the above named committee, in order that it may be incorporated in the great national work, which now promises to be speedily completed.

From a publication in the American Daily Advertiser of the 3d inst. it appears that the following medical delegates composed the Convention.

From the College of Physicians of Philadelphia—Doctors Thomas Parke, Samuel P. Griffiths, Thomas C. James, Thomas T. Hewson, Edwin A. Atlee, Joseph Parrish, Samuel Stewart.

From the Medical Society of the State of New York—Doc-

tors Samuel L. Mitchill, John R. B. Rodgers, John Watts, jr. Lyman Spalding, Alexander H. Stevens.

From the College of Physicians and Surgeons of the City of New York—Doctors William J. Macneven, John W. Francis.

From the College of Physicians and Surgeons of the western district of New York—Doctor Lyman Spalding.

From the New Jersey Medical Society—Doctors Charles Smith, John Van Cleve.

From the Medical and Chirurgical Faculty of Maryland—Doctors Samuel Baker, Elisha De Butts.

From the Medical Society of Delaware—Doctor Allen M'Lane.

From the Medical Society of the District of Columbia—Doctors Henry Hunt, Thomas Henderson.

Doctor Thomas Parke was elected president of the Convention, Samuel L. Mitchill, vice president, Lyman Spalding and Samuel Baker, secretaries.

Two outlines of a Pharmacopœia, and an outline of a Code of Medical Ethics, were proposed to and considered by the Convention.

Philadelphia, June 7, 1819.



Extract, from an act to vest a certain burying ground in the Board of Health, and to provide for registering the birth of Children in the City of Philadelphia and its vicinity.—Passed March 27, 1819.

Sect. 2. And be it enacted by the Authority aforesaid—that it shall be the duty of all persons who may pursue or practise midwifery in the city of Philadelphia, in the incorporated part of the Northern Liberties, in the township of Penn, and the districts of Southwark and Moyamensing, between the first day of March and the first day of April, annually hereafter, to leave their names in writing, and the places of their residence, at the office of the board of health; and when so left, it shall be the duty of the clerk to receive and enter the same alphabetically in a book to be kept for that purpose, which shall be open at all

times, during office hours, to persons desirous to inspect the same.

And all persons pursuing or practising midwifery as aforesaid, shall keep a true and exact register of the births that take place under their care and superintendence; and shall, from time to time, as they may happen, enter the same, with the sex of the child so born, on a blank schedule, to be furnished to them by the clerk of the health office; which schedule shall be signed with the name of such person, and delivered on the last Saturday of each month to the clerk of the health office, or other person calling for the same. And every person pursuing or practising midwifery, neglecting or refusing to leave their names and places of residence at the health office as aforesaid, or to perform any other of the duties required by this act, shall forfeit and pay, for each offence, the sum of twenty-five dollars, to be recovered in the manner and for the uses prescribed in "an act for establishing a health office, and to secure the city and port of Philadelphia from the introduction of pestilential and contagious diseases, and for other purposes."

Extract, from an act for establishing a Health Office, and to secure the City and Port of Philadelphia from the introduction of pestilential and contagious diseases, and for other purposes. Passed January 29, 1818.

SECT. 26. *And be it further enacted by the authority aforesaid,* That whenever any person shall die in the city, district, or township aforesaid, the physician or surgeon who shall have attended such person, as a physican or surgeon, during his or her last sickness, shall leave a note in writing, signed with his name, with some one of the family in the house where such person shall have died, specifying the name and apparent age of the deceased and the disease of which he or she shall have died. And every physician or surgeon refusing or neglecting to make and deliver such note, shall forfeit the sum of five dollars. And that no sexton of any church, or other person having charge of any cemetery, vaults, or burial grounds, in the city, district, or townships aforesaid, shall permit any dead body

to be interred therein, until he has received such note in writing so signed as aforesaid; or in case no physician or surgeon shall have attended such deceased person, or the physician or surgeon who did attend shall have neglected or refused to leave such note, then a like note signed by some of the family in which such person shall have died. The contents of which note in writing, shall be entered by such sexton on a blank schedule to be furnished by the clerk of the Health Office, or such other person as the Board of Health direct, and delivered, together with the said schedule, on the Saturday of every week to the Health Office for publication, in such form as may be designated by the Board of Health. And that every sexton or other person, having charge of any place of interment, neglecting or refusing to perform any of the duties required by this act, shall forfeit the sum of twenty-five dollars.

HYDROPHOBIA.

Extract from a publication by Doctors Sargent and Elijah Griffith.

[From Poulson's American Daily Advertiser.]

Impelled by humanity, a sense of duty, and a desire of exciting the public attention and fixing it on our common danger; the undersigned have been induced to offer the following facts and remarks for publication.

On the morning of the 4th inst. we were requested to visit Christopher Klowson, residing in Seventh street, near where it enters the Germantown turnpike. We saw him about 9 o'clock, A. M.; he was quite rational, and gave us a detailed account of his feelings, with all the previous circumstances.

He stated that he had been bitten in his right fore-arm by a large dog on the 20th of February last, at 2 o'clock, A. M. whilst discharging his duty as one of the city watchmen; that he then placed himself under the management of a person who professed to understand preventing the disease; from this person he took and swallowed four papers, at the price of one dollar

each. The wound healed in about one month; since then he had continued well until the morning of the 3d inst. at 2 o'clock; when he felt an uneasy sensation *in the part bitten*, attended with a weakness like palsy, as he expressed it, which soon passed through his shoulders into his body, and produced a fixed pain in the stomach; which was very severe at intervals, particularly at the approach of a paroxysm, and was accompanied by general flu-hings, which were visible in his face.

The first notice he had of any difficulty in swallowing, was in the morning on his way home from the watch; not feeling well, he called in for a glass of wine bitters at a tavern, but made many unsuccessful attempts before he swallowed it. At breakfast he had much difficulty in swallowing a little coffee and a small quantity of solid food. He described no symptoms but the weakness, flushing, pain in his stomach and difficulty in swallowing, particularly fluids; and it was not till the afternoon of the 3d, that he suspected hydrophobia; at which time he was bled and took a dose of castor oil, which had the usual effect; he said he had not slept half an hour the night before we visited him.

He made several attempts at swallowing water when we were present, and succeeded in throwing down one or two tea spoonsful with much convulsive difficulty, but swallowed with more ease a bit of bread that had been dipped into water. The sensation he expressed, as attending these attempts, resembled that of drowning or smothering. A distressing apprehension or timidity, as to every thing about him, appeared to be ever present, especially when a person came into his chamber, or on a current of air being admitted, or any appearance of water, &c.

We bled him; he was much alarmed at the operation, had a spasm, and observed that he never had been afraid of being bled before.

On examining his arm we found three distinct marks of the dog's teeth, but no visible inflammation. He held one hand hard pressed on the epigastrium almost constantly, and said every paroxysm began by a severe pain there, which made him press violently at the time; this had the appearance of something spasmodic.

He did not appear disposed to injure any person who came near him; on the contrary, he showed much affection for his wife and children. We visited him again in the evening, in company with Dr. Otto of this city, and Dr. Baker of Baltimore, and found all the distressing symptoms alarmingly increased. Every thing that the time and circumstances would admit of, was done for him, but to no purpose; after passing a night of unspeakable distress, being quite exhausted, he quietly sunk into the arms of death, at 7 o'clock this morning; exactly 53 hours after he felt the first symptoms of this awful and fatal disorder.

THOMAS SARGENT,
ELIJAH GRIFFITHS.

Philadelphia, June 5th, 1819.

HYDROPHOBIA.

[From Poulson's American Daily Advertiser.]

In compliance with the request of several persons, the subscribers have been induced to lay before the public a brief statement of the case of Hydrophobia which occurred in Southwark a few days since. The unfortunate subject of the disease was Miss ELIZA FRAME, aged about 19 years, who resided in Second street, near Catharine. It appeared from the information given by the young woman herself, and confirmed by others, that she had been bitten about four weeks before, by a small grey dog, on the inside of the middle finger of the left hand. The wound was contracted while the patient had been in the act of driving the dog out of the room in which she was sitting. A friend proposed to send for medical assistance, but this she declined, from the apparently trifling nature of the accident, and an avowed belief that the dog was not mad. In a short time, however, the animal discovered a very vicious disposition by biting several other persons, and it was conceived necessary to destroy him.

This was accordingly done, without its being further determined whether he was really rabid, or not; he, as far as we were

able to ascertain, not having been seen, or examined by any one possessed of competent knowledge to decide. The melancholy event however of the wound received from him by Miss Frame, sufficiently, in our estimation at least, denotes the dreaded malady with which he must have been affected. We were told that the wound bled freely, was somewhat painful the first day, but soon healed.

In twenty-seven days after, Eliza began to complain of pain in the right side, and of being frequently chilly. On the 2d day of her indisposition her side became easy, but a more severe pain seized the left elbow, which was soon extended down to the hand, and upwards to the shoulder. Early in the morning of the 3d day she proceeded according to her usual custom to wash herself, and while attempting to apply the cool water to her face, she involuntarily started back, and suffered a pretty severe attack of a spasmodic affection.

A sense of suffocation attended this attack, and her sufferings were such as to oblige her to desist from what she was doing, nor was she at any other time during the day able to make any further application of the water to her face. In the course of the day she sustained repeated attacks of spasms, produced by other exciting causes, always referring her chief uneasiness to the breast, stomach and the upper part of the throat. In the night following she experienced a paroxysm of the spasms more alarming than any that had occurred before, impressing for the first time, both the patient and the lady with whom she resided, with an apprehension of her case being dangerous.

At six o'clock in the morning of the 4th day, the symptoms with which she had been before affected were now presented in an aggravated form. The pulse was tense, and frequent; the causes capable of exciting the spasms, and the attending sense of suffocation had been multiplied. A mere draught of air from a door was at this time sufficient to induce them, and every attempt to swallow liquids was not only impracticable, but certain to occasion great anguish. At half past nine o'clock, A. M. the pulse was 130 a minute, and her distress arising out of the frequent occurrence of the spasms, and the danger of suffocation, was very great. Her thirst was insatiable, and she was fre-

quently making efforts to discharge from the mouth and throat a frothy saliva, which was of so viscid a nature, that she was often under the necessity of detaching it with her finger.

The nervous system was excitable to so great a degree, that any sudden movement in the room, such as the opening or shutting the door, the undulation of the water used by the person engaged in cupping her, although she did not see it, the flame produced by burning the pieces of paper employed by the cupper, and many other causes which, under other circumstances, would be equally trifling, were remarked at different times to precipitate this unhappy girl into convulsions, exhibiting that kind of poignant suffering, which perhaps may be more easily conceived of, than expressed by language. Her intense thirst has been referred to; it may be useful, on some other occasion, to remark that a temporary alleviation of that sensation was obtained, by applying to her mouth and lips some lime juice.

In the intervals of her paroxysms the mind became a little composed, and she was several times capable of speaking collectedly. We were of the opinion that this occasional mental composure, was in part to be attributed to our having very carefully kept from her knowledge, the nature of her complaint. In one or two instances, when the bite she had received was adverted to within her hearing, she manifested but little present concern about it, and enquired whether there could be any danger of her becoming mad, in consequence of it. That the tendency of the wound she had received had occupied very little of either her attention or her fears, was rendered more fully evident by the fact of her having forgot, when her case was first under investigation, that she had been bitten by a dog. When she was asked if such had been the case, she replied in the negative. There was much local irritation about the neck and throat, pressure, even of a light kind, made with the fingers on the upper cervical vertebræ was repeatedly observed to produce spasms, and a sense of stifling, or difficulty of getting the breath. This symptom, it is conceived, is accounted for by what is stated in the last passage of this communication.

At 11 o'clock A. M. the pulse became weak and tremulous, and in a few minutes ceased at the wrist, her voice was next

observed to fail her, and she expired at half past 11. To the medical profession it may be interesting to state, that the treatment consisted of two bleedings, one of ten, and the other of thirty ounces, and a cupping along the course of the spine.

In the examination of the body after death, the spinal marrow was found inflamed.

HARVEY KLAPP, M. D.
JOSEPH KLAPP, M. D.
HENRY NEILL, M. D.

Philadelphia, July 1, 1819.

Hospital for the Small-Pox, for Inoculation, and for Vaccination, at Pancras.

[From the London Medical and Physical Journal, for March, 1819.]

AN account of the number of Deaths occasioned by the casual Small-Pox, extracted from the register for twenty years before the practice of Vaccination, and also for twenty years since; also the Number of Deaths as reported by the Parish Clerks of London, &c. copied from their general Bills of all Christenings and Burials for the same period:—

<i>Before Vaccination.</i>			<i>Since Vaccination.</i>		
A. D.	Hosp. Reg.	Par. Reg.	A. D.	Hosp. Reg.	Par. Reg.
1779			1799		
to	1867.	36,189	to	814	22,480
1798			1818		

Decreased in deaths since the practice of vaccination was introduced—at the Hospital, 1053; in the Parishes, 13,709.

Vaccination was introduced into practice at the Hospital for Inoculation, by Dr. Wm. Woodville, with the disease taken from the cows belonging to Thomas Harrison, esq. of Gray's Inn-road, on the 19th January, 1799. Six patients were vaccinated by the Doctor, in the presence of Sir J. Banks, bart. Sir W. Watson, Drs. Garthshore, George Pearson, Robert Willan, and several other medical gentlemen. The number

vaccinated from that date to the 1st of January, 1819, amounted to 43,394 at this Hospital.

J. C. WACHSEL, *Resident Surgeon.*

High Operation for the Stone.

[From the Medico-Chirurgical Journal, for January, 1819.]

There was lately performed, on a boy about 14 years of age, at St. George's Hospital, an operation for the stone, wherein the calculus was removed by an incision above the pubes. The steps of this process were, we understood, as follows:—The patient being secured in the usual manner, a sound was introduced into the bladder, and an incision was made into the membranous part of the urethra through the perinæum. A director was then introduced into the bladder, and the staff withdrawn. A kind of bistoire cachée, in the shape of a catheter, was next introduced along this director, and the latter removed. The bistoire being pushed up so as to press upon the upper part of the bladder, an incision was made in the linea alba, in the place where we puncture the bladder; but this incision was not carried right into the bladder, the cutting part of the bistoire cachée was pushed forward and made to come out at the wound in the linea alba. This wound was next enlarged downwards towards the pubes, by a bistoury, the point of which, we understand, was fixed into the groove of the bistoire cachée. The stone, it seems, was encysted, and Sir Everard Home was obliged to introduce his finger to free the calculus, which was removed by the forceps, though with some difficulty. The bistoire cachée being removed, a hollow gum catheter was introduced through the lower wound into the bladder, so that the water might drain off constantly, and prevent extravasation from the upper wound. The boy has had a remarkably good recovery, without any sinister accident.

Mr. CURTIS, the Surgeon of the Royal Dispensary for Diseases of the Ear, has lately found gentle emetics highly serviceable in cases of incipient deafness in young children. *ib.*

Bronchocele.—Professor Walter, of the university of Landshut, has lately published, respecting the treatment of bronchocele, a pamphlet* which merits particular attention. He distinguishes the affection into four different species. In the first, which he names *aneurismal bronchocele*, the arteries, veins, and capillary vessels, are alike dilated. The second, or *lymphatic bronchocele*, seems to depend upon the effusion of coagulable lymph into the cellular structure of the thyroid gland. *Scirrhus* and *inflammatory bronchocele*, constitute the third and fourth divisions. Professor Walter's monograph is devoted exclusively to a consideration of the aneurismal species; and the following is one of the cases therein detailed:—A man, aged 24, had an enormous aneurismal bronchocele, which impeded both respiration and deglutition. The Professor made an incision one inch and a half in length, at the point where the left superior thyroideal artery was seen to pulsate. A second incision, cautiously practised, laid bare the vessel; and after several smaller arteries had been secured, a ligature was passed round it. At the expiration of a fortnight, the left portion of the tumour was reduced at least one-third in volume. The ligature of the opposite artery was accomplished on the 17th of June, but in consequence of the vessel being covered by the enlarged thyroid gland, the operation occupied three quarters of an hour. On the 15th of July the patient left the hospital. At that time he swallowed with facility; and the bronchocele, sensibly reduced, hung down in the form of an empty sac. Two years afterwards, the Professor learned that the subject of this operation had entered into the army.

The result of this experiment is certainly calculated to counteract the unfavourable impression left upon the minds of Surgeons by the failure of a similar attempt made some years since in one of the London hospitals†; and would doubtless justify its repetition in any instance where the bronchocele, by its pressure on the œsophagus or trachea, menaced fatal conse-

* Bulletin de la Société Médicale d'Emulation. Juillet, 1818.

† This case, if we mistake not, is mentioned in Mr. Hodgson's admirable Treatise on the Diseases of Arteries; but we are unable, at this moment, to refer to it. LOND. EDIT.

quences. In the unfortunate case to which we have alluded, death took place from secondary hæmorrhage. We have no doubt that, if it were necessary, one or both of the inferior thyroideal arteries might also be tied by any Surgeon correctly acquainted, as all Surgeons ought to be, with the relative anatomy of the parts upon which he was operating.

Lond. Med. Rep. for January, 1819.

Geological Society of Connecticut.

The legislature of Connecticut, at its present session, have incorporated a Geological Society, composed of the following gentlemen, viz. Col. George Gibbs, of New York; Professor Silliman, of Yale College, New-Haven, Conn.; Parker Cleaveland, of Brunswick, Me.; J. Webster, of Boston; Robert Hare, of Philadelphia, and Robert Gilmore, jun. of Baltimore, and their associates. The objects of this society, as expressed in the act of incorporation, are—to encourage investigations into the Geology and Mineralogy of the United States, for the promotion of science, generally; and particularly in relation to the deposits of metals, mineral coal, salts, plaister, limestone, marble, and other useful and ornamental substances. Indeed, their views embrace the investigation of all the mineral kingdom, considering them all as either curious in science, or useful in art.—*New-York Daily Advertiser.*

Morphia.

[From the Annals of Philosophy, for February, 1819.]

An account of the original experiments of Sertürner on the infusion of opium, his method of extracting morphia and meconic acid from that infusion, and the subsequent trials of Robiquet and Vogel, have been already given in this journal. But no account has yet appeared in English of the results obtained by M. Franz Anton Choulant, though they have been published at least a year ago in Gilbert's *Annalen* (lvi. 342).

As these experiments are the most minute, and probably the most precise that have been yet made, I shall in this and some of the following notices state the principal facts contained in his paper.

1. *Method of procuring Morphia.*—Four ounces of well-dried and pounded opium were digested in repeated quantities of cold distilled water till the liquid amounted to the quantity of about 16 English pints. This infusion was evaporated by a gentle heat on the sand-bath, in a glass vessel, till it was reduced to eight ounces. The whole was then poured into a porcelain evaporating dish. After standing at rest for eight hours, in a temperature between 54° and 77° , six grains of small crystals were deposited, which possessed the properties of sulphat of lime. The whole, being evaporated to dryness, was redissolved in four ounces of distilled water, with the exception of a small quantity of brownish-coloured resin. Oxalate of ammonia being dropped into the solution, it became muddy, and a precipitate fell, which weighed, when dry, $3\frac{1}{2}$ gr. After this precipitate had been separated, muriate of barytes was added, as long as it occasioned a precipitate. This last precipitate, being separated and dried, weighed two grains.

The solution was now diluted with eight pints of distilled water, and caustic ammonia poured in as long as any precipitate continued to fall. The precipitate thus obtained was white and flocky. After standing two hours, it became granular and brown. It weighed six drachms. It dissolved completely in eight ounces of distilled vinegar, and was precipitated by caustic ammonia without any alteration in its colour or its weight. Upon this precipitate, one ounce of sulphuric ether was poured; the mixture swelled up considerably. It was thrown upon a white paper filter. In the course of an hour and an half, a deep black liquid ran through, which weighed half an ounce. It had a strong ammoniacal smell, burned very readily, and left a bulky charcoal behind it.

The matter remaining upon the filter had a frothy appearance; but, when dry, it was in the state of a very fine powder, and had lost much of its dark colour. It now weighed $4\frac{2}{3}$ drams. This powder was digested three times in caustic ammonia, and as often in alcohol. Both of these liquids acquired a dark-

brown colour, and left the *morphia* in the state of a brownish-white powder, reduced to the weight of three drachms.

This powder was dissolved in 12 ounces of boiling alcohol. The filtered solution being set aside for 18 hours, deposited colourless, transparent crystals, consisting of double pyramids. These crystals weighed 75 gr. and consisted of *morphia* in a state of purity. The alcoholic solution being evaporated to two ounces, deposited one drachm of *morphia*, similar to its state before its solution in the alcohol. When still further concentrated, 15 gr. of yellow-coloured *morphia* were obtained. The crystals of *morphia* thus obtained contained no traits of ammonia.

2. *Properties of Morphia*.—It crystallizes in double four-sided pyramids, whose bases are square, or rectangles. Sometimes in prisms with trapedoizal bases.

It dissolves in 82 times its weight of boiling water, and the solution on cooling deposits regular, colourless, transparent crystals.

It is soluble in 36 times its weight of boiling alcohol, and in 42 times its weight of cold alcohol of 92°.

It is soluble in eight times its weight of sulphuric ether.

All these solutions change the infusion of Brazil wood to violet, and the tincture of rhubarb to brown.

They have a bitter and peculiar astringent taste, and the saturated solutions of *morphia* in alcohol and ether, when rubbed upon the skin, leave a red mark.

The following are the salts of *morphia* examined by Choulant.

(1.) *Sulphate of Morphia*.—It crystallizes in prisms, dissolves in twice its weight of distilled water, and is composed of

Acid	22	5.00
Morphia	40	9.09
Water	38	

100

(2.) *Nitrate of Morphia*.—Needle-form crystals deposited in stars. Soluble in $1\frac{1}{2}$ times its weight of distilled water. Constituents,

Acid	20	6.75
Morphia	36	12.15
Water	44	
<hr/>		
100		

(3.) *Muriate of Morphia*.—Feather-shaped crystals and needles. Soluble in $10\frac{1}{2}$ times its weight of distilled water. Constituents,

Acid	35	4.625
Morphia	41	5.132
Water	24	
<hr/>		
100		

(4.) *Acetate of Morphia*.—Crystallizes in needles. Soluble in its own weight of water. Constituents,

Acid	36	6.375
Morphia	44	7.791
Water	20	
<hr/>		
100		

(5.) *Tartrate of Morphia*.—Crystallizes in prisms. Soluble in thrice its weight of water. Constituents,

Acid	42	8.375
Morphia	36	7.178
Water	22	
<hr/>		
100		

(6.) *Carbonate of Morphia*.—Crystals short prisms. Soluble in four times its weight of water. Constituents,

Acid	28	2.75
Morphia	22	2.16
Water	50	
<hr/>		
100		

On the Equivalent Number of Morphia.

From the numbers which I have annexed to the preceding analyses of Choulant, indicating the weight of the atoms of the acids, and the corresponding number for morphia, it is obvious that the analyses are very far from correct; for we obtain a pe-

culiar number for morphia from each salt. These numbers are as follows:

From the sulphate . . .	9.009
nitrate . . .	12.150
muriate . . .	5.132
acetate . . .	7.791
tartarate . . .	7.178
carbonate . . .	2.160

The number from the carbonate differs so far from the rest that we must exclude it. It is obvious that the substance examined must either have been a mixture, or a subsalt. The mean deduced from the remaining five salts, gives us 8.268 for the weight of an atom of morphia. In the present state of the investigation, we may take 8.25 as an approximation to the weight of an atom of morphia; but in all probability it is not a very near one. Choulant's experiments must have been made upon too small a scale to expect accurate numerical results.

Lunatic Hospital at Avignon.

This hospital is under the management of the Lady Superior and twenty-five sisters of the *Soeurs de la Charité*; a director, his assistant, with two or three men-servants to clean the men's ward. Number of patients, one hundred; average dismissed cured, ten every year.

Treatment.—It is the principle of the director never to contradict a patient, but to appear to obey and execute his most extravagant wishes. The greater part of the patients enter this hospital with the strongest antipathies against some friend or public person; suspect a conspiracy against their lives or fortunes; and urge or plan the death or ruin of the persons exciting their resentment. The director patiently listens to their complaints, offers to execute their orders, how and when they please, and thus quickly gains an ascendancy over them. When their dress is worn out, he renews it, in form and colour precisely as they entered the hospital. They are allowed food at any hour they think proper, by night as well as by day. Plenty of water is always placed in their rooms.

One of the most difficult things is to induce them at first to keep their rooms clean. They are often apt to do every thing when it should not be. He gets the better of them by this easy management. There is a lad, nearly an idiot, that goes about the house and digs in the garden. When a room is dirty, immediately the director tells the patient, that he is sorry that the poor idiot has contrived, by the negligence of the director himself, to slip into the room and dirty it. He entreats the patient to watch well that the idiot does not return. He rates and scolds the poor boy; and this, repeated two or three times, almost always induces the patient to be cleanly.

Neither strait waistcoats, nor ropes, nor chains, are ever used. There is a long gallery, with a range of small rooms on one side, and of larger rooms opposite. An outrageous patient is merely confined in the small room, in which is a bedstead, chair, and table, all screwed to the floor, with a straw mattress and blankets; no glass is in the windows, but iron bars, and outside Venetian blinds, that can be closed so as nearly to exclude the cold air, if necessary. When the patient is quiet, he is allowed to cross the gallery into the opposite room, while his own is cleaning out. When convalescent, the patients walk in an open gallery; in good weather in a garden, and attend regularly the chapel of the hospital.

"The great object we have always in view," said the Director, "is to keep the mind of the patient free from irritation, by giving him food whenever he chooses, and by appearing to obey his wishes against absent persons. We always urge, that his *bodily health* requires his remaining in our house.

"We never beat or threaten a patient, but impute, before him, any misbehaviour of his to another person. It was found difficult to get the women patients to cut their hair. As soon as we observe that they take notice of their own dress, we give them a small looking-glass, and, shortly after persuade them it is the fashion to cut the hair short, and wear a neat cap." Five of the sisterhood attend daily by rotation. Meat and soups are kept warm in the kitchen night and day. Small wine is allowed the patients in moderation. Little or no medi-

cine is used beyond common purgatives. A physician calls daily, but is not exclusively attached to the establishment.

The institution is supported by an estate belonging to the hospital, which escaped the confiscation under the Republican government.

The above information was communicated at Avignon, in December 1816. *Edin. Med. and Surg. Journal.*

THE PHILADELPHIA MEDICAL SOCIETY,
desirous of promoting the advancement of Medical Science, by obtaining and preserving accurate histories of the Epidemical Diseases of this Country, have authorized their Corresponding Secretaries, on behalf of the Society, to offer a GOLD MEDAL of the value of one hundred dollars, for the best dissertation on the History, Description, and most successful mode of Cure of the Epidemic, which has prevailed in various parts of the United States, for the last few years, commonly known by the name of TYPHUS or SPOTTED FEVER. The Essays must be written in the English or French language, and transmitted, under cover, sealed, to one of the Corresponding Secretaries, on or before the first day of January, 1820. The name of the Author must accompany each Essay in a separate sealed envelope.—The envelope containing the name of the successful Author shall alone be opened.—The Essays shall be at all times at the command of the Authors.

The Publication of the Essay to which the Medal shall be awarded shall be optional with the Society; but should it be published, the emoluments arising therefrom shall be secured to the Author.

Communications, post paid, may be directed either to

Dr. THOMAS T. HEWSON,

No. 132, Chesnut street, or

Dr. JOHN BARNES,

No. 203, Arch street,

Corresponding Secretaries of the Philadelphia Medical Society.

Obituary.

Died, April 30th, 1819, Doctor JAMES P. FREEMAN, aged twenty-three years.

Died, at New York, on Saturday the 22d of May, 1819, in the 84th year of his age, HUGH WILLIAMSON, M. D. L. L. D. Fellow of the American Philosophical Society, of the Literary and Philosophical Society of New York, of the College of Physicians and Surgeons of the University of the State of New-York, of the Society of Arts and Sciences of Utrecht, &c. &c. In every situation of life, in which it was the fortune of this eminent individual to be placed, he was distinguished by undeviating integrity and honour. Called, at an early age, to take a part in our war of independence, he, for a considerable time, held a conspicuous rank in the medical department of the American army. He was appointed one of the delegates from the state of North-Carolina, in the Convention which formed the present constitution of the United States, and served as a member of congress both anterior and subsequent to that event. But high as was his political career, his services in the cause of literature and science are not less meritorious. Upon the first formation of the University of Pennsylvania, he acted as professor of mathematics in that institution; and, in conjunction with Rittenhouse, Ewing and Smith, was appointed by the American Philosophical Society of Philadelphia to observe the Transit of Venus in 1769. The account of their joint labours appears in the transactions of that learned society. He published many other papers, medical and philosophical, in the journals of different associations; and an account of his experiments on the *Gymnotus electricus* in the transactions of the Royal Society of London. But his literary and scientific reputation chiefly rests on his history of North-Carolina, and his essay on the climate of the United States, which last work alone is sufficient to transmit his name with renown to posterity. He was associated with the New York Hospital, the Humane Society, and most of the other benevolent institutions of this city; and their records bear ample testimony to his disinterested zeal and unwearied exertions in behalf of humanity. He was deeply read in theological studies, and his researches resulted in an entire conviction of the truth of Christianity, and a practice of life conformable to its divine precepts. He has left to the world another example of the union of high attainments in philosophy with confidence in the Christian consolation. Long will his vir-

tues live in the memory of his friends, and deeply will his loss be felt by society.

A mere sketch of the character of the deceased is here attempted—a detailed account belongs to the biographer.

The Trustees of the University of Pennsylvania, have elected Dr. PHILIP S. PHYSICK, Professor of Anatomy in that institution, in the place of Dr. DORSEY, deceased.

METEOROLOGICAL OBSERVATIONS.

STATE of the weather at Philadelphia during the first six months of 1819.

JANUARY.

Thermometer—Lowest at 8 A. M. 19. 29th day of the month.

Highest at 3 P. M. 51. 19th, 27th and 28th

Mean, 35. days.

Southerly winds—slight snows.

FEBRUARY.

Thermometer—Lowest, at 8 A. M. 22. 18th and 19th days of the month.

Highest, at 3 P. M. 60. 10th day.

Mean, 40.

South-westerly winds prevalent—Deep snows on the 12th and 26th—but little rain—a mild winter. River open and navigable the two last months—The winter has been uncommonly mild in Europe.

MARCH.

Thermometer—Lowest, at 8 A. M. 21. 3d day of the month.

Highest, at 3 P. M. 66. 6th and 30th days.

Mean, 47.

Westerly winds most common—Several snows. An uncommonly cold month—Rain at different times—Heavy thunder and lightning on the 30th—Ice Islands met with in this month.

APRIL.

Thermometer—Lowest, at 8 A. M. 34. 3d day of the month.

Highest at 3 P. M. 79. 14th day.

Mean, 55.

Winds variable—westerly predominant. Clear weather generally—Aurora borealis at Boston for several nights, the latter part of this month.

MAY.

Thermometer—Lowest, at 8 A. M. 50. 8th, 13th and 28th days
of the month.

Highest, at 3 P. M. 82. 22d day.

Mean, 62.

Northerly winds—Several rains.

JUNE.

Thermometer—Lowest, at 8 A. M. 56. 2d day of the month.

Highest, at 3 P. M. 91. 9th day.

Mean, 75.

Much southerly wind—A warm month—and a very dry time—Clover crops good and well got in—Winter grain very promising—Cherries plentiful.

The season has been healthy—mild scarlatina continued to this month—little or no account of small pox—Inflammatory catarrh amongst children, and sore throats in adults have been prevalent in the spring months—several deaths this month from drinking cold water—and much alarm excited by the occurrence of some cases of Hydrophobia—In consequence of which, ordinances have been enacted by the City Councils, by the Boards of Commissioners of the Incorporated parts of the Northern Liberties and of Spring Garden, and by those of Southwark, for the destruction of all Dogs running at large in their respective limits.

College of Physicians of Philadelphia.

JULY 6, 1819.

The following Officers of the College were duly elected.

President.—Doctor Thomas Parke.

Vice President.—Samuel P. Griffitts.

Censors.

Doctor William Currie,

Henry Neill,

Thomas T. Hewson,

Edwin A. Atlee.

Treasurer.—Doctor Thomas C. James.

Secretary.—Doctor John W. Moore.

List of recent European Publications.

Transactions of the Royal Society of London, for 1818. Pt. II. 4to.

Transactions of the Royal Society of Edinburgh. vol. VIII. Pt. II.

Botany and Horticulture.

Fuci; or coloured Figures and Descriptions of the Plants referred by Botanists to the Genus Fucus. By Dawson Turner, Esq. A. M. F. L. S. No. XLV. 4to.

Chemistry and Natural Philosophy.

The Elements of Experimental Chemistry. By William Henry, M. D. F. R. S. &c. &c. Eighth Edition, comprehending all the recent discoveries; with plates. 2 vols. 8vo.

An account of the History and present State of Galvanism. By John Bostock, M. D. F. R. S. 8vo.

The System of the Weather of the British Islands, discovered in 1816, and 1817; from a Journal commencing in 1802. By Lieut. George Mackenzie, R. P. M. 4to.

Medicine, Anatomy and Surgery.

A supplement to the Pharmacopœias. By G. F. Gray. 8vo.

Practical Researches on the Nature, Cure and Prevention of Gout. By James Johnson. 8vo.

An account of the Small Pox, as it appears after Vaccination, &c. By Alexr. Monro, M. D. With plates. 8vo.

Observations on the Extraction of the Placenta. by James Murdock, M. D. 8vo.

Pathological and Surgical Observations on the Diseases of the Joints. By B. C. Brodie, F. R. S. Illustrated by plates. 8vo.

An Essay on the Disorders of Old Age, and on the means for prolonging Human Life. By Anthony Carlisle, F. R. S. &c. 8vo.

Erratum.

In page 262, line 19, of our last number, for *false wheat*, read *false rye*.

THE
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ANALYTICAL REVIEW.

VOL. IX.

OCTOBER, 1819.

No. IV.

SELECTED PAPERS.

Observations on Cancer. by T. PARKINSON, M. D.

[From the London Medical and Physical Journal, for June 1819.]

IN the following observations I purpose to treat of Cancer, distinctly, under two different stages:—1. The scirrhus stage, *Symphylakesis passiva*; 2. The cancerous stage, *Symphylakesis progressiva*.

I have opposed the term *Symphylakesis* to that of Cancer; and, in rendering the term, the identity of the disease will be displayed.

SYMPHYLAKESIS—*Συμ- cum*, with, *φυλασσω, incarceration*, to imprison: *complicated incarceration*.

Symphylakesis is, and cannot be otherwise, a secondary disease, arising out of one of those processes by which inflammation retires; namely, *Proscollèsis*, or morbid accretion. But, as the term implies, it has a peculiarity characteristic of its very nature, and by which it is distinguished from all other diseases, bearing, in external appearance, a strong resemblance. I am called upon, then, to point out such peculiarity. This I hope to be able to do most clearly, in giving the analysis of the disease.

I have deemed it expedient and necessary to banish alto-

gether the hypothetical terms as applied to this disease, *hereditary, predisposition, idiosyncrasy, cancerous virus*, &c. and confine myself to the mere narration of the morbid animal process by which the disease is originally formed, and the manner in which it proceeds to its fatal termination; not deduced from theoretical notions, but from an abundance of practical observation.

It has fallen to my lot to be very generally consulted, both at home and at considerable distances from home, in cases supposed to be cancerous; in many of which I have had recourse to the operation, or, in a greater number of cases, have superintended the operation when it has been performed by others. This has afforded me opportunities sufficiently numerous of examining the diseased parts, after they have been removed by the operation; and in all instances I have discovered, that the disease called cancer consists of what the term *Symphylakesis* implies, namely, complicated incarceration.

Complicated incarceration, stands opposed to simple incarceration; simple incarceration, signifying merely the imprisonment of any animal solid, by being surrounded by accreted adipose membrane, without vital connexion and intertexture; and, consequently, without any new functions being set up between the incarcerating cyst and the substance incarcerated; instanced in steatomatous tumors and scrofulous glandular tumors: and this form of disease is expressed by the term *Phylakesis*, *φυλάσσω*, to imprison. But complicated incarceration signifies something more than what is discovered in steatomatous and glandular tumors of the scrofulous denomination, namely, an association of a vital nature, connexion, and intertexture; and, consequently, a new and adscititious function set up and established between the cyst and the body enclosed by it: this is instanced in the scirrhus tumor denominated *Symphylakesis*.

The solids so morbidly associated are generally supposed to be gland and adipose membrane: this is the common association in the disease before us, but perhaps not the only one. This circumstance will, however, be enquired into, when we consider that disease which is usually denominated *Fungus Hæmatodes*.

In the present discussion, I shall limit myself to that parti-

cular disease which is denominated the Cancerous Scirrhus; and which, if uninterrupted, destroys life through the slow and painful process of gangrenous ulceration, and the consequent constitutional sufferings. I shall, therefore, take it for granted, that the morbid connexion and function are established between a gland and adipose membrane.

Now, no such connexion can be formed in a healthy state of parts; while in health, they will each be distinct in their anatomical construction, and will duly exercise their distinct and individual functions: consequently, will be obedient to those laws which govern life, health, and disease, in legitimate solids.

But, when a change of structure takes place from disease, a corresponding change of function also will be the inevitable consequence. Under these circumstances, the subjects of disease will not be governed by the laws of health; neither will they obey those which are rigidly observed under all the primary diseases, in which there is no change of structure; and, consequently, no change of function, except what consists in an increased or diminished exercise of it.

The manner in which this change of structure, and of function, is effected, becomes our next consideration.

The two originally distinct solids, adipose membrane, and gland, become morbidly associated in their substances and in their official capacities: hence, they are no longer legitimate in their nature; neither are they under the control of the laws of the animal economy.

It appears to me essential to the accomplishment of this association, that the gland and the adipose membrane be both under inflammation at the same time, and that they be kept in close contact, so that accretion of the two solids may be fully and firmly established; and, indeed, that they should pervade each other's substance, or so intimately mix, as to become one individual adscititious solid.

The construction of the breasts of women is favourable to this kind of association, they being composed of glandular and adipose substances, in some degree connected with each other, but yet distinct in their structural arrangements and functions; and they require only a less intensity of inflammation than

what is requisite to destroy the solids; but yet sufficient to produce adhesion, and that the same tone of inflammation be kept up for some time, to unite them in one adscititious substance.

It appears, then, *Symphylakesis* is always a secondary affection, the resulting consequence of a certain intensity of inflammation remaining after the parent inflammation has ceased; and cannot have existence without inflammation as its cause. Hence, then, is manifest, the necessity of proper attention to those diseases which prevail in the breasts of women, from the approach of puberty till the final cessation of the menses. It is possible, that a slight tone of inflammation, if suffered to be long continued, may be productive, ultimately, of the most serious and fatal consequences.

An enquiry into the nature of those changes which take place in the breasts of girls, and the functions they assume at puberty, and preserve till the approach of old age, together with the manner which, at that period, they are deprived of their function, will direct us in drawing our nosological deductions, and lead us to the most appropriate treatment of those diseases to which they are particularly liable.

In childhood, the breasts of girls are not distinguishable by any external marks or configuration from those of boys; but, at puberty, those of the female have to prepare for the performance of a peculiar office they are expected to be called upon to fulfil; that is, to provide milk for future offspring. In this preparatory process, it is remarked, that the breasts enlarge, and become prominent, in consequence of assuming a new organization at developing what had been hitherto concealed; namely, a glandular substance, with an additional accumulation of adipose membrane: and, indeed, such an accretion seems essential to afford them their official capacity. In this state they remain, with those varieties which depend upon pregnancy, menstruation, giving of suck, &c. till the approach of old age; and then it is, that the functions not only of the breasts, but those of all the female sexual organs, cease; manifested by the incapability of bearing children, the final cessation of the menses, and by the removal of the glandular substance of the breasts, by a process retrogressive of that which established it at puberty.

Now, the breasts of women are not only exposed to injuries from external violence, which are followed by inflammation, but they are also peculiarly liable to inflame, under those changes which they undergo at the approach of puberty, in the intervals of menstruation, during that process, in pregnancy, in giving suck, in weaning; and, in that important change which always takes place at the final cessation of the menses.

At the approach of puberty, it has been already observed, that new appearances, properties, and capabilities, are put on; and, on this occasion, there is, perhaps always, some degree of pain complained of, at least generally there is: and it is not at all uncommon for that pain to be severe, especially on the approach of every periodical visitation, attended with enlargement of the whole substance of the breast. These symptoms, however, are mitigated, or even vanish, on a free menstrual evacuation, until the near approach of the succeeding visitation. This affection is seldom attended with any very serious consequences: so soon as the habit of menstruation is fully established, the complaint ceases altogether.

But there is another morbid affection, which sometimes occurs at puberty, in the acquisition of official capacity, which is more deleterious in its consequences; and to which I would lay claim to your close attention. Instead of the whole of the glandular substance being enlarged and painful, a certain definable part of it only is so affected, somewhat painful, especially under pressure; and is readily distinguished from the sound parts of the breast by its extraordinary hardness or density, forming a tumor describable by the feel. It does not resolve, though it is less painful in the intervals of menstruation.

I have mentioned this affection as occurring at puberty; it nevertheless happens, from adequate causes, at any period between the first appearance and the final cessation of the menses: and, let me add, the adequate causes are, whatever are capable of exciting and keeping up a certain, but low, tone of inflammation, in some distinct part of the glandular substance of the breast and the adipose membrane surrounding it.

A disease of this kind, being formed in early life, will remain dormant, and seemingly innoxious, without causing the woman to complain; will be passive, even when the other parts

of the glandular substance are in the full exercise of their function: but it must be remembered, that, at the approach of old age, the peculiar functions of the breasts are to cease wholly, and that is effected by the removal of that organic substance which was put on at puberty, and in which the official capability resided. All this is easily, and is always accomplished under a natural and healthy state of the breasts: that is, the glandular substance of the breasts is absorbed, leaving the integuments loose and flabby, or more commonly filled with adipose substance. But, under a diseased state of the adipose membrane, and especially under that form which I have described as accretion of adipose membrane, converted, as it were, into ligament, enclosing a part of the glandular substance, united with it in structure and function; an illegitimate substance, disobedient to the laws of the animal economy; it will be readily allowed, that such a production will not so easily be removed: indeed, it cannot; but that process which does actually remove the sound parts, makes the same attempt upon those diseased, and rouses them into deleterious energy: that is, inflames them. They then exercise their own adscititious function, establishing a system of their own; whose basis is morbid accretion and vital connexion between solids of every description, even embracing the bones.

It requires no extraordinary share of attention and discernment, to discover that the whole of this process is actually progressive inflammation, and should have some influence in directing the method of treatment in the scirrhus stage, or whilst it remains *Symphylakesis passiva*.

From this view of the subject, then, it appears that the scirrhus originates in inflammation; that it remains dormant, as a disease, after inflammation has ceased; at an advanced period of life, it is provoked into action of the same kind, and to the same effect, as that with which it was originally formed; that its progress is accretion, and all its consecutaria; that it is not under the government of the laws of natural solids; that its type becomes *progressive*; and that its issue is fatal.

Having traced the scirrhus from its beginning, through its passive stage, down to its cancerous stage, I shall now view it in its progressive type, that is, as *Symphylakesis progressiva*.

What I would have understood by the progressive type, is, that state of the scirrhus which is advancing fast towards ulceration, or is already ulcerated. This state, though not peculiar to advanced age, rarely is met with till towards the approach of the final cessation of the menses. It then, after having been in a quiescent state for many years, is suddenly roused into strong and rapid action. The identity of disease is the same in every period of its existence; that of accretion of one solid to another, with vital connexion established between them: and, although the process commenced with the adipose membrane and the gland, yet it extends to all solids whatever, the skin, muscles, bones, &c.; embracing them all in one solid mass of disease, extending in every direction. The axillary glands become scirrhus, and very commonly the arm on that side is œdematous; the surface of the original tumor becomes ulcerated; the pain becomes severe and lancinating; and the constitutional sufferings are obviously increased. The progress of the cancerous ulceration is peculiar to itself: whilst it increases in all directions, it becomes gangrenous on its ulcerated surface; of course, the neighbouring parts are progressively brought into a diseased, a scirrhus state, and constantly dying by gangrene: consequently, the discharge from the ulcerated surface is highly fœtid, and the constitutional sufferings or sympathies are truly afflicting.

There is, however, a disease of the breasts of women much resembling Symphyllakesis, particularly in external appearances and impenetrable hardness, of a character and nature very different. It affects the breast during giving suck, and not unfrequently at a remote period of that process, be the age of the subject what it may.

The disease I allude to, is Phylakesis; or simply, incarceration of a gland, or a number of glands, by accreted adipose membrane, without vital connexion and associated function being established. It generally terminates favourably, by the incarcerating cysts being brought into a state of gangrene by the constant application of cold, and the glandular substance afterwards running into small dissinct abscesses, which heal kindly after a few days: and especially if the woman cease to give suck from that breast.

I have been consulted in a great number of cases of this kind; and have always been able to distinguish them from what is called legitimate cancer, chiefly by the unevenness of surface intimating that it is not any determinate portion of the glandular substance which is diseased, but the whole of it, exhibiting distinct prominences under the skin, without any change of colour of the integuments in the beginning, but increasing in prominence, and gradually acquiring a livid hue, on the external surfaces. Lancinating pains are complained of, resembling those so common in the cancer. I have always employed the same means with the same effect,—success; and shall, therefore, mention what that treatment consists of :—*R. Extract. Conij ʒij. Aquæ fontan. ʒviij. M ft. Lotio, partibus affectis assidue applicanda.* The bowels to be kept rather open with sulphate of magnesia, or any other cooling aperient. The worst cases of this kind have got quite well in about six weeks after the cold lotion has been had recourse to.

Now, I consider the disease I have just described, to be precisely the same as the scrofulous glands which prevail in the neck. I repeat, simple incarceration of a gland by its surrounding accreted adipose substance; and the success I have met with in the treatment of it, in the breasts of women, has naturally led me to the adoption of the same means, when the disease has been resident in other parts of the body. The effects have been similar, though more slow, in progress: that is, the cyst being destroyed by cold, which is easily accomplished, either by the means above-mentioned, or by the generation of more intense cold, if necessary, by the evaporation of spirit of wine or alcohol from the surface of the tumor; then the gland will have the opportunity of suppurating and healing, or of being reduced to its natural size by the process of absorption, and the healthy exercise of the neighbouring parts upon it.

But, to return to the disease professedly the subject of this essay, *Symphylakesis*. When the disease is once formed in early life, it may, and very often does, give little trouble, and is disregarded, and that even for many years; but, at a certain period, in the way already pointed out, it is roused into deleterious energy: it rages with almost uncontrollable fury, and

consumes its victims by the extremes of protracted torture. It is a matter of deep interest, then, to discover, at least, what constitutes its real character; and, if possible, to obtain a method of treatment, if not altogether adequate to the removal of the disease, when the knife has been too long rejected, yet capable of mitigating that sum of human misery which is so eminently connected with the cancer.

Viewed in the light I have shewn it, I am persuaded there cannot be any conflicting opinions with respect to the means to be had recourse to, when the disease is once known to be instituted. It appears, from what has been stated, that it commences with inflammation of a gland, and a portion of the adipose membrane immediately investing it; that the primary disease, in the act of retiring, by one of those natural processes by which it is known to retire—adhesion, leaves a morbid connexion and adscititious function, set up between the two substances implicated in the disease; and this latter is a secondary affection, the offspring of a primary one, remaining after its parent has ceased to be. Now, there is no means, with which I am acquainted, which can be employed with any reasonable prospect of overcoming this morbid connexion and function, and of averting that misery of which it is the precursor, excepting the actual separation of one of the morbidly-united parts from the other, or the total removal of them altogether from surrounding healthy parts.

The first of these operations appear, from what has been said, to be next to impossible; and, indeed, were it accomplishable, there is no certain test by which it can be ascertained that it is actually effected: and the very nature of the disease points out, what daily observation fully confirms, that any operation, not extended beyond the limits of the diseased solids, will but accelerate the progress of the malady, and aggravate the sufferings of the subject of it. An attempt, then, to effectually and certainly separate the two accreted solids, must yield to the less painful, but more decided and efficacious operation, of the total separation of the diseased parts altogether from those which are healthy.

Certain various opinions have been advanced by the advocates for the operation last-mentioned, respecting the proper

period of the disease for the performance of it. A review of the process by which the disease is originally formed, and by which also it makes its progress through all its stages, will, I am inclined to believe, reconcile any conflicting opinions which prevail, perhaps at the present time, on that question. I would, therefore, recommend a steady and careful examination of the doctrine I have promulgated respecting the nature of the cancer; and, if it be found to be built upon solid and just principles, it will unite all in one consolidated opinion, that the most proper time to perform the operation is, so soon as the morbid process, *Symphylakesis*, is known to be set up: for what can be the use of delay, when the progress of the disease is identically the same process as that which first formed it, namely, accretion?

A supposition that the cancer was produced by a peculiar poison, would naturally lead to, and in some degree justify the conclusion, that the operation ought to be delayed until it could, with some degree of precision, be ascertained how far the poison had extended its influence; and, therefore, to what limits the operation should be carried. This, however, is not strictly correct; for, if the disease makes progress by the extension of poison, there cannot be any greater certainty respecting the distance it has extended to, after many years' delay, than there was when the disease was first discovered. And so also it is, if the accreting process be admitted as the basis of the cancer, I cannot perceive what advantage can be obtained from delaying the operation any longer than till its true character is understood.

Various methods of treatment have been recommended, approved, adopted; and all, in their turns, rejected: and those, even now applauded, will probably share the same fate, excepting, however, those which have for their bases the total removal of the diseased parts from those which are sound.

The comparative merits of the knife and the caustic are pretty fully determined, and properly in favour of the former; therefore, it is unnecessary for me to dwell upon that subject. I would, however, throw into the scale an observation, which strikes me as being of some practical importance. As the parent of the disease, that is, the primary affection which pro-

duces it as one of its offspring, was *inflammation* resolving by accretion; that, so long as a certain tone of inflammation continues, the accretion will extend, but no longer. Hence it is, that when the disease is formed in early life, it remains passive until the approach of old age; unless, by some casual circumstance, a new accession of inflammation should be provoked. But, let it be remembered, that, at an advanced period of life, the function of the glandular substance of the breast must be abolished, and that by the removal of the glandular substance, by an animal process retrogressive, which first deposited it. This process, although fully adequate to the removal of the healthy substance, cannot be so successful with an association of solids with unnatural function, which constitutes the scirrhus: the attempt, however, has the power, and indeed constantly the effect, of provoking the diseased association into diseased energy; into a slight tone of inflammation; under which state, and under that state only, can the accreting process make advances: consequently, it is only under an inflammatory action that the disease called scirrhus, or cancer, can make any progress.

How plain is it, then, that the primary disease is inflammation; that the secondary affection is a morbid animal process, set up in the resolution of inflammation; that the progress of the cancer is inflammatory; and that the subject of it is such portion of the associated glandular and adipose substances by morbid accretion, which cannot be removed by the ordinary animal process, before the approach of the final cessation of the menses. Not that it is supposed that the scirrhus cannot be brought into an inveterate and ulcerated state before the period of life just alluded to: it often is; nor is it at all more surprising, that the removal of the glandular substance of the breast is sometimes attempted, and even accomplished, in the most vigorous and healthy periods of life. And let me ask, are not these concomitant and simultaneous in all cases where the scirrhus is roused into deleterious energy in early life?

The following inference is deduced from the foregoing premises: that the disease, called cancer, in the breasts of women, is morbid accretion; and the precise subjects of it, are those portions of the breast which cannot be removed by a natural process, at the approach of old age, in common with the sound

parts, in consequence of their morbid change of structure and function, effected by the process of accretion.

Innumerable, almost, are the articles of the *materia medica*, and other substances, which are comprehended in the catalogue of specific remedies or antidotes; that is, those which have the property of destroying, or of expelling the cancerous poison: and some of them have a most deleterious tendency, such as arsenic, oxydes of hydrargyrus, cicuta, &c. These, and others of no less powerful action on the living animal solids, and, consequently, capable of altering the state of the animal and vital actions, may be tried with safety, under the immediate superintendence of a skilful director; but, the moment he proclaims his success, though that is only delusive, the ignorant will not fail to imitate him, and endeavour to surpass him by venturing to employ the remedy with greater force and frequency, perhaps to the destruction of the deluded patient, than the original recommender dared himself to have done.

The point, I believe, is pretty well settled, respecting a specific virus being the cause and production of the cancer; and that of its hereditary character appears fast retiring into the back-ground of popular opinion. But, how much soever be our acquirement of the knowledge of the real nature of the cancer, little has been discovered of late years which holds up a distant hope of pointing out any remedy, excepting that of removing the diseased from the sound parts.

Many years ago, when Mr. Howard was surgeon, and Dr. H. Vaughan, now Sir Henry Hallford, physician, if I mistake not, to the Middlesex Hospital, and had principally the direction of the treatment of cancerous patients, for the reception of which one of the wards of the hospital was appropriated, I had several communications with Sir Henry. I believe, I sent him the history of several cases supposed to be cancerous, and deemed such by his father, then an eminent physician at Leicester, as well as by others of the profession, which yielded to the external application of a cold cicuta lotion.* And I must add, that the diseases to which the lotion had been successfully applied, were of the character which I have fully described;† and

* Vide page 440.

† Ibid.

to which, when I had distinguished it from the cancerous scirrhus, and had obtained the means of always correctly distinguishing them, I gave the name of *Scirrhus suppurans*; shewing its resemblance to the cancerous scirrhus in hardness and want of sensibility, but differing from it in its progress and mode of termination. Professing now, however, to denominate diseases from their identities, I have given it the appellation *Phylakesis*.

I shall here take the liberty of introducing a case in point. Mrs. Hubbard, of Countesthorpe, about seven miles from Leicester, a healthy young woman, in an early period of suckling her first child, was attacked with a disease in her breast, which increased in extent, though not in pain, becoming daily harder under the application of poultices and other topical applications, chiefly recommended by her neighbours. At length, finding no benefit, she became apprehensive of evil consequences, and consulted a physician at Leicester. After the application of leeches, and the use of aperients, &c. for some time, the doctor declared it to be a cancer, recommending, as the only certain remedy, the total removal of the breast. The patient consented: lodgings were provided in Leicester, a surgeon fixed upon to perform the operation, and the time appointed. In the meantime, Mrs. Hubbard called upon a lady in Leicester, who, she heard, had undergone an operation similar to that which she was about to submit to: indeed, I performed it. The lady advised her to consult me, previous to being operated upon: she did so, and I immediately discovered it to be phylakesis, not symphylakesis. I declared my opinion, and proposed a consultation with the doctor; to which he objected, on the alleged grounds that there could not be two opinions on the case. The patient, however, put off the operation, and placed herself under my care. I, of course, employed the means I have described; and the event was, she recovered in the way and manner as all other such like diseases have done.

Pressure, as a remedy for the removal of the cancerous scirrhus, has obtained some fashion; and, perhaps, when it can be employed so as to embrace the whole of the diseased parts, and completely cut off all their connexion with the sound ones, and at once destroy the functions of diseased solids, it might

be successful; and yet not so formidable an operation as that by the knife; and would, in many instances, obtain a preference. But, if it fall short of so much efficiency, I should really be under serious apprehension that it would prove an accelerator of the disease, by exciting inflammation.

I may, however, venture a suggestion, with which I shall conclude this paper. Reduce the general animal and vital actions very low; and then destroy the diseased parts by intense cold, so long continued as to prevent re-action, which may be accomplished by the evaporation of alcohol from the surface.

Enumeration of those Indigenous Plants which have an Emetic Effect. By MR. GRAY.

[From the London Medical Repository, for June, 1819.]

OF the several medicines, advised by the London College of Physicians to be kept in the shops of that city, and its neighbourhood, as being in common use amongst their members, there are no less than four which are frequently employed as emetics, namely, emetic tartar, white vitriol, ipecacuanha, and oxymel of squills. It may therefore seem to some superfluous, to recall to the memory of practitioners, the existence of others which grow wild in England, and, although now neglected by most regular practitioners, have been, and still are by some employed as emetics in the cure of diseases.

Those, however, who pay attention to the secondary and even third actions of medicines, after the cessation of their primary effect, must know that those whose primary actions are the same frequently vary in other respects. Thus, in the class of medicines now under consideration, what practitioner is not aware of the difference between the after-actions of tartar emetic and ipecacuanha; so that although when the simple evacuation of the contents of the stomach is the sole object in view, it is indifferent which of these medicines is employed; yet in other cases, when a further and secondary action is required, then each has its appropriate use, and cannot be employed in the other's place. Now, as this difference is well known in these two medicines, which are of daily use at pre-

sent, we have every reason to suppose that every medicine has its peculiar, and in some respects, specific action; and hence the superiority of one practitioner over another, in point of medical practice, will depend very much upon the greater number of medicines their superior reading or experience will allow them to employ.

A real friend to the medical profession sees, with regret, many patients who have tried the routine of the ordinary medicines in the college list, who afterwards apply to persons educated in foreign countries, or hard students in the old authors, and receive that relief which they could not obtain from our simple hospital practice. And with still greater regret he sees the majority of practitioners, instead of endeavouring to extend their knowledge of the *materia medica*, and acquiring the mode of using the nostrums of their occasionally more successful brethren, contenting themselves with the common shop medicines.

With a view to enable practitioners, especially those in the country, to increase the number of their resources, the following collective view of such emetic vegetables as grow wild in England, or are usually cultivated in private gardens, has been drawn up.

Although an infusion of three to six asarabacca leaves in whey was the most common mild vomit before the introduction of ipecacuanha, yet authors differ much in respect to the other actions of this plant. Some say, thirty to forty grains of the powdered root excites violent vomiting: while others say it works milder than the leaves. It would appear, that neither the root nor leaves ought to be given in substance, but in infusion; namely, one to two drachms of the leaves, or one to three drachms of the root.

The roots of betony, *betonica officinalis*, are emetic, but very violent, and must therefore be given in small doses.

The roots of horse radish, *cochlearia armoracia*, are emetic, especially the rind; it may be given either in substance, or still better in infusion, which should be made very strong; it is very serviceable in cases where the stomach is loaded with thick phlegm, as being incisive. An infusion of the seeds is also used for the same purpose.

The expressed juice of the root of common garden radishes, given warm, is considered by some as a good emetic; or a strong infusion made by expression of three drachms of the seed bruised.

The roots of asphodel lily and narcissus, have been used as emetics.

The juice, or a decoction of common groundsel, *senecio vulgaris*, has been much used as an emetic, in doses of one to two ounces: it acts violently, and is also vermifuge.

Although spinach is not itself emetic, our old botanical writers recommend it as an adjuvant, as tending to facilitate the action of emetics, by inducing a disposition to vomit; and it may therefore be serviceable in a few cases where it is wished to empty the stomach with as little exertion as possible.

The juice of wall-pepper, or stone-crop, *sedum acre*, is strongly emetic, and has been used as such; it is also antiscorbutic. A handful boiled in a pint of stale beer to an half, and two or three ounces of the strained liquor drank warm, fasting, was used with success in the Swedish army, in scurvy. Its immediate action was emetic. The juice taken with vinegar is used by some to cure obstinate agues.

The dried roots of primroses, *primula veris*, taken up in autumn, in doses of one drachm and a half, operate as a strong but safe emetic; it is therefore probable, that it might be substituted for *ipecacuanha*, in the usual dose of that foreign root.

The fresh root of bryony, or wild vine, *bryonia dioica*, in doses of one drachm, has been used in dropsical cases, as an emetic and hydragogue cathartic; also the expressed juice in doses of two drachms to half an ounce. With a view to render its operation milder, the slices of the fresh root have been infused in wine, and then dried.

Spurge olive, *daphne mezereum*, although an English plant, is admitted a place in the pharmacopœia. The berries have been attempted to be used as an emetic; but their acrimony is so great, that they are to be regarded rather as poisons than as potent but manageable remedies; twelve grains produced almost immediate death: but spurge laurel, *daphne laureola*, although not in the pharmacopœia, is really the plant which

produces the twigs sold in the shops for those of daphne mezereum; that plant being very scarce, and not to be found about London.

The leaves of buckbean, *menyanthes trifoliata*, in doses of one drachm, not only vomit, but also act as cathartics; and the seeds are also said to be emetic.

The emetic action of camomile flowers is too well known to need any further notice, especially as they still continue a shop medicine.

An infusion of a handful of water hemp agrimony, *eupatorium cannabinum*, vomits smartly, and, moreover, acts as a purge; as also a decoction of one ounce of the root.

The roots of herb Paris, or one berry, *Paris quadrifolia*, are said to act very similarly to those of ipecacuanha; but they must be given in a larger dose.

An infusion of broad leaved pepper-wort, *lepidium latifolium*, is emetic.

The distilled water of less spear-wort, *ranunculus flammula*, has the most instantaneous action of any emetic yet known, operating the moment it is swallowed, without exciting that contraction in the upper part of the stomach which the sulphas zinci sometimes occasions, and by which its action is defeated; the juice has been said to have the same effect; but it seems too acrid to be given internally.

Besides the above, other plants common in England have an emetic effect, as the dried inner rind of the walnut tree, a decoction of ash keys, the seeds and bark of the elder tree.

From this recapitulation it appears that the country practitioner has an ample resource, in case of his wishing to try the effect of indigenous remedies, when the foreign or chemical ones fail.

Observations on Rabies Contagiosa. By DANIEL JOHNSON, Esq. formerly a Medical Officer in the Honourable East India Company's Service.

[From the Medico-Chirurgical Journal, for April, 1819.]

HAVING passed all the middle part of life in India, a country by no means friendly to European constitutions, particularly to those, who, like myself, were impatient of confinement and regardless of the climate, I am now suffering from its baleful influence, with little expectation of relief. To amuse the tedious hours of a sick room then, I shall take up my pen, occasionally, to communicate to the author of the "Influence of Tropical Climates on European Constitutions," (a work which needs no encomiums from me) such observations as my long residence in India has enabled me to make; with the hope that they may prove useful to my countrymen in that distant quarter of the globe, especially when promulgated through the medium of Dr. Johnson's writings, which must have an extensive circulation between the tropics.

The subject of this my first paper is Hydrophobia, a dreadful, and, I believe, hitherto an incurable disease. The number of persons bitten by mad dogs and mad jackals, that came under my care, while surgeon at Chittrah, (Rhumghur) would appear almost incredible, were they to be stated here.

In every instance where I had time or permission to impregnate the system with mercury after the infliction of the bite, and before the symptoms of hydrophobia shewed themselves, the latter were entirely prevented. If it be feared that I may have been deceived on this point, I hope to dissipate such fears by stating, that not a year passed at the station above-mentioned, in which I had not numbers to attend to, *bitten by the same animal*. Of these there were some who, from religious prejudices, would not submit to the course of medicine I prescribed, preferring the prayers of the Brahmin priest. *These* regularly perished by the disease, while the others, bitten by the same animal, and at the same period of time, were invariably preserved from hydrophobia, where salivation was induced.

This, which I think may be fairly called the *experimentum crucis*, I have put to the test so often, with the same identical result, that not a shadow of doubt remains on my mind relative to the entire efficacy of the prophylactic. The proofs, indeed, are positive, negative, and comparative; and I leave it to the consideration of the profession at large, and especially of those employed in our Indian territories, where the occurrence of hydrophobia is so frequent, whether or not to adopt a preventive measure which offers so certain a check to this most dreadful of all diseases. Neither salivation nor any other remedy has ever, in my experience, arrested the disease, when once it had commenced its destructive career.

It often happens that mad dogs or jackals get into the kennels or dog houses in India, and sometimes even mingle with the dogs in the field while sporting. This is when they are in the first stage of madness; and they will then go considerably out of their way to attack and bite all that come in their sight. In such cases a general examination must be made, and every dog that bears the least mark of scratch or bite must be put to death. Even this precaution does not always ensure perfect safety, as the following, selected from several other facts, will tend to show. While I was coursing one day with a leash of greyhounds and four or five terriers, a jackal appeared at a considerable distance on a plain. The greyhounds were slipped; the dogs saw the animal, and immediately made directly for him. To my great surprise, the jackal, instead of making off, ran straight towards the dogs, and I soon discovered that he was raging mad. It was impossible to separate them till they had killed him. I went immediately home, had all the dogs washed, and examined them myself in the most minute manner. I found four favorite dogs bitten, and these were instantly hanged. The others, having no marks of the least scratch, I considered as safe. About three weeks afterwards, however, on my march to Calcutta, my dog-keeper came running up to my tent, one day, crying aloud, and at the same time keeping three terriers, as well as he could, at arm's length, they making all possible efforts to bite him. As soon as he approached, I saw, by their erect hair, like bristles, inflamed eyes, and foaming mouths, that they were mad; I therefore directed the poor

fellow to twist their cords round a tree, which he dexterously effected, and then I caused them to be dispatched with a wooden mallet, used for driving the tent pins. The dog-keeper was bitten in at least twenty places; some of them trifling, others large bites. To the whole of these I applied lunar caustic, and put him into a salivation as quickly as I could. The ptyalism was kept up for fourteen or fifteen days. He lived with me several years afterwards, and remained in perfect health.

On another occasion I had a small pet spaniel puppy, about six months old, tied up in the verandah, which cried out violently, one day, as if something was killing it. On the servant's running to see the cause, a hyena threw it out of his mouth, and very reluctantly went off. The puppy was washed and minutely examined, but no injury could be discovered. The puppy was, however, smeared over with slime, which must have been the saliva of the hyena. No idea was entertained at the time that the hyena was mad, though he certainly quitted the premises with more reluctance than is commonly observed. About three weeks after this, the puppy came running into a room where nearly fifty people were assembled at a notch, or Hindostannée dance, raging mad. The little creature instantly attacked every thing that came in his way, and the whole notch was instantly dispersed in all directions. Several chairs were broken before the rabid animal could be killed.

Whether, in these instances, the dogs received the poison by some of the saliva of the mad animals passing into their mouths, or by respiring the effluvia arising from them, I cannot take upon me to say; but I can confidently assert, that they had no wounds. The above will satisfy gentlemen that, after a dog has been worried, or come in contact with another that is mad, he should be kept tied up for a month, to see the event. I may here state an important fact which I had ample means of unequivocally ascertaining; namely, that in no one instance did a dog become mad, after remaining well after the bite a month. The usual period, in India at least, and as far as came under my own observation, was from fourteen to twenty-five days after the reception of the poison.

There is a generally received opinion in India, that dogs and jackals become more frequently mad there, in consequence

of the number of putrid human carcasses which they have to feed on. But this idea is, I think, erroneous; because, at Chittrah, rabid animals are as common as in any part of India, or perhaps more so; yet, in that place, no human carcase is to be seen, in consequence of the abundance of fuel to be procured for nothing, which enables the inhabitants to burn their dead—a ceremony from which the Hindoos are only prevented in any place by scarcity of fuel. I may remark another curious circumstance which I have repeatedly and invariably observed, namely, that the animals above mentioned, are most frequently mad at the time the jungle fever is most prevalent, and *vice versa*.

Finally, may I be permitted to object to the term HYDROPHOBIA; since I have very generally observed that, in the incipient stage of the disease, instead of *dread*, there is the most intense thirst and craving *desire for water*. The power of swallowing the fluid, however, is taken away; and every attempt brings on a violent and painful spasm of the diaphragm and muscles of deglutition and respiration. It is, I am convinced, the dread of such painful recurrences that produces, by association of ideas and feelings, the dread and horror of water, or even the sight or name of that liquid.

D. JOHNSON.

Torrington, Devon, Dec. 1818.

On the Treatment of Puriform discharge from the Ear. By
J. H. CURTIS, Esq. Surgeon-Aurist to the Prince Regent.

[From the London Medical and Physical Journal, for May, 1819.]

OF the diseases of the ear, one of the most obstinate and perplexing to practitioners is that attended with a puriform discharge, and so termed from this circumstance. The success of the practice I have adopted in this disagreeable and obstinate complaint has, I believe, been more fortunate than that obtained from the measures generally employed, if we may be allowed to form conclusions from the statements of the best authors on this subject. This cannot be better illustrated than

by the recital of a few cases selected from the records of my practice, in the order in which they have occurred.

Miss B. of St. John-street, aged 26, had been from her childhood affected with deafness and a puriform discharge from one ear. After having been under the care of several eminent surgeons in London for upwards of two years without relief, she applied to me. On inspecting the ear, I found the meatus much excoriated by the discharge, which was very profuse and offensive; the tympanum, I observed, was partly destroyed, as air could be forced out of the passage. In other respects the ear appeared perfectly sound. Adopting my usual plan of not stopping the discharge hastily, I ordered a blister to be applied behind the ear, which was kept open for a fortnight; after which the patient used an injection of *zinci sulphas*; but this not appearing to have the desired effect, I had recourse to the *argentum nitratum*, as recommended by Mr. Saunders in cases of this nature. The patient began by using ten grains in four ounces of water, and I increased it to the extent of thirty-five grains, which completely healed the parts; and I had the further satisfaction, at the same time, to find her hearing restored. It may be necessary, perhaps, to mention that it took nine months to complete the cure.

A similar case of a young gentlemen yielded also to this treatment; but his case, though not of so long standing, I at first sight considered more difficult to cure, from his having a polypus extending directly across the meatus, which I removed by an instrument I had constructed for the purpose. Immediately after the operation he was able to hear, but the discharge continued for some time, though at last it was happily entirely suppressed.

Another case of the same nature occurred in a lady, who was sent to me by a physician, whose hearing was defective in both ears, in consequence of a puriform discharge. This case yielded in a short time to a varied combination and change of injections, consisting of solutions of *zinci sulphas*, *plumbi superacetas*, *argentum nitratum*, *cupri sulphas camph.* joined occasionally with camphor and opium.

A great number of cases of a like description have come under my observation, as already stated, at the Royal Dispen-

sary, and have yielded to a similar plan properly persevered in for a length of time.

The above cases, I trust, will sufficiently prove that diseases of this nature are frequently curable, when a proper plan of proceeding is persevered in.

Abstract of the Anniversary Oration delivered before the Medical Society of London, on the 8th of March last. By T. J. PETTIGREW, Surgeon.

[From the London Medical Repository, for June, 1819.]

MR. PETTIGREW commenced his oration by expressing his surprise, that, considering the frequency of the occasion on which the physician or surgeon is called upon to give evidence in a court of judicature, and that no less than the life of an individual, the forfeiture of his property, or the confinement of his person, are principally dependant upon the testimony of the professional witness, so little attention should have been paid to forensic medicine in this country. "There is not," he observed, "a single course of lectures, either of a public or a private nature, delivered in this metropolis upon this interesting branch of inquiry. Few, very few works have been written respecting it in our language, and those merely of an elementary kind: the advocate is entirely at a loss where to seek for information, by which he may institute such inquiries as are necessary to the correct appreciation of the merits or demerits of the cases in the investigation of which he may be engaged, and to the determining of the validity or vagueness of the criteria which may be stated upon medical testimony. The attention of the medical student, not having been directed to this branch of science, unassisted by those publications which might enable him duly to appreciate its importance, and correctly to estimate the cogency or insufficiency of his opinions, is placed in the most embarrassing circumstances when called upon to give his evidence.

Dr. Haslam has justly observed, that "the important duty which the medical practitioner has to perform, when he deli-

vers his testimony before a court of justice, should be *clearly defined, conscientiously felt, and thoroughly understood*: his opinions ought to be conveyed in a perspicuous manner; he should be solemnly impressed that he speaks upon oath, the most sacred pledge before God between man and man; and that the life of a human being depends on the clearness and truth of his deposition." In the first section of the Introduction to the Commentaries of the Laws of England, Sir W. Blackstone has expressed an opinion that the study of the law is not of more importance to medical men than to any other class of society. The learned judge, Mr. P. conceived, was probably led to make the above observation in consequence of the exemption of medical men to serve on juries or inquests; or to undertake parochial offices: but it will be found that physicians and surgeons are frequently called upon to perform duties which require not only a knowledge of the principles of jurisprudence, but of the forms and regulations adopted in our courts of judicature.

The advice of the medical attendant is occasionally required in cases of sudden emergency, respecting a last will and testament. This is admitted by Sir Wm. Blackstone. It is therefore necessary that the physician or surgeon should be acquainted with the laws relating to the transfer or alienation of property either *personal* or *real*; with those relating to the incapacity of persons afflicted with madness, idiotcy, dotage, &c.; for making bequests and disposing of their property; and on this subject they will sometimes be required to give solemn judicial evidence. They should also be familiar with the laws relating to *nuncupative* testaments, or that which depends merely upon oral evidence, being declared by the testator *in extremis* before a sufficient number of witnesses, and afterwards reduced to writing. If it be important, continued Mr. P., for medical men to possess a certain knowledge of law, its forms and regulations; it is no less necessary for the lawyer to obtain some portion of medical information. To know the healthy from the diseased structure; to be acquainted with the several operations of the animal economy; the probable effects of different acts of violence that may be committed on the

various organs of which the body is composed; the morbid appearances produced by the taking of poisons, &c.

To Coroners, in particular, this knowledge is of the greatest consequence, the possession of it would enable them to make a proper examination of the medical witnesses, upon whose judgment the nature of the verdict almost invariably depends: and it would lead them to attach a due importance to speculative or practical opinions, and qualify them for correctly charging a jury. The persons who usually compose inquests and juries have not, and cannot be supposed to possess, any acquaintance with the operations of the animal economy: they are, therefore, necessarily directed by the presiding legal officer.

The Germans and French have paid the greatest share of attention to forensic medicine, and their Professors have published some valuable treatises on the subject: generally speaking, however, they are but ill adapted to the jurisprudence of this country. Medical jurisprudence, legal or forensic medicine, or, according to the Germans, state medicine, divides itself into two principal branches. First, That which relates to judicial cases; and, secondly, That which relates to the preservation of the health of the community.

The first division, to which Mr. P. confined himself in this oration, may be regarded as it relates either to the criminal, civil, or ecclesiastical courts.

I. The cases cognizable in the criminal court may be arranged under the following heads:—

1. Poisons, animal, vegetable, mineral, and gaseous.
2. Wounds and contusions.
3. Apparent death from drowning, hanging, suffocation, intoxication, lightning, excessive cold, lethargy or apoplexy, catalepsy, epilepsy, trances, &c.
4. Abortion.
5. Infanticide, and concealed birth.
6. Rape.

II. Those which belong to the civil court are:—

1. Insanity.
2. Idiotcy.
3. Pretended or assumed diseases.

4. Imputed diseases, consisting of impotence, lues venerea, fits, insanity, fatuity, pregnancy, pretended and retarded delivery.

III. Those which belong to the ecclesiastical court consist of:—

1. Questions relating to marriage.
2. Impotence.
3. Hermaphrodites.

That the orator should enter into detail upon a subject involving so many points for consideration, in the course of time usually allotted to anniversary orations, could not be expected. He therefore confined himself to those points which he regarded as some of the principal desiderata relating to this interesting branch of inquiry.

Poisons, Mr. P. remarked, have of late years been much and successfully attended to. The labours of the Naturalist, the Chemist, and the Physiologist, have been equally exerted to advance this branch of human knowledge. Certainly there are but few subjects more worthy the attention of the Philosopher; to which his researches may be directed with so much advantage to mankind, whether regarded as affording admonitions of danger, as supplying us with the means of averting or remedying serious disorder, or enabling us to detect crime of the most heinous description. It is to the laborious researches of M. Orfila that we are principally indebted for the information we possess on this subject. By a well contrived series of experiments, he has arrived at the most important conclusions. He has described, in the most masterly manner, the physical and sensible characters of poisons in their natural state, and has explained the chemical properties of each of these substances. He has not only detailed the phenomena presented by the action of a great variety of chemical tests, but he has also shown the differences which the poison, when mixed with alimentary matter of various kinds presents, when examined with the same tests, and the changes effected on the poisonous substances by its admixture with the biliary and other secretions. His researches are exceedingly valuable, as they relaté to the antidotes to the deleterious effects of poisonous matters. This knowledge has been derived from experiments upon animals,

in several instances confirmed in their results by trials on the human species. He has also pointed out the best methods of detecting the nature of the poisonous substance, whether in its natural state or mixed with any extraneous body. To the juridical Physician his labours are of the highest value, for he has enumerated those symptoms which distinguish acute poisoning from other diseases, showing the variations of those symptoms, according as vomiting shall or shall not have taken place, and determining the degree of confidence which ought to be attached to the experiments, in which animals are made to swallow the matter vomited by the patient suspected of being poisoned. He has detailed the manner of proceeding in the opening of bodies suspected of having been poisoned; and has shown the importance that ought to be attributed to the lesions of texture produced by the different classes of poison; the different states of these lesions in bodies already corrupted, and in those examined shortly after death; whether the poison has been taken during the life of the person, or has been introduced after death.

From this slight sketch of the objects of M. Orfila, the importance of his work, in a juridical point of view, will be evident; but, although much has been effected by this learned Physician, still much remains on which it is desirable we should have information.

Poisons are derived either from the animal, vegetable, mineral, or aerial kingdoms. They may be taken into the stomach by the mouth; into the lungs through the medium of the air; into the bowels in the form of clyster, or into the circulation by means of the absorbent system, conveying them from the skin when applied to it in the form of ointments. They appear to act chemically and mechanically.

Upon being called to an individual who is said to have taken poison, the first point of attention should be to ascertain the kind of poison taken, and the manner and vehicle in which it was taken, whether before or after a meal. The kind of food last partaken of should be examined, as to whether any mineral, vegetable, or animal matter of a deleterious nature should be mixed with it; whether it possesses any peculiarity of taste or smell. It has been recommended to give a portion of it to a

dog, or other animal, to ascertain its effects; but this will afford no certain criterion, as that matter which is poisonous to man, may not be so to brute animals. Goats feed readily upon hemlock, which to man is poisonous. Corrosive sublimate, which to man is a poison of the most violent kind, when taken to the extent of a few grains only, may be given to a horse in the large quantity of an ounce without injury. Dogs are said to be capable of bearing, with impunity, a larger quantity of this drug than man. On the contrary, aloes, which can be taken by the human species in considerable quantity, when given to dogs and foxes in a very small portion, speedily proves fatal.

Many symptoms in common with those arising from the taking of poison, such as vomiting, purging, swelling of the abdomen, griping, eruptions on different parts of the body, &c. may be produced from having eaten of bread composed of grain, ergot, mildew, &c. From peculiar idiosyncracies of constitution many persons are affected in a similar manner by eating several species of fruit, &c. All these symptoms must be distinguished from those which arise from the presence of poison. The matter vomited should be preserved for chemical examination; and should the case terminate fatally, the whole of the contents of the stomach and other abdominal viscera, should be carefully preserved. The stomach in particular should then be minutely examined; also the whole of the intestinal canal; and should no particular appearances present themselves, the heart and its large vessels, the brain, and other viscera, should be attentively examined. It is well observed by Dr. Male, in a late publication of Forensic Medicine, that "unless all the different viscera are examined, a jury should cautiously decide how far surgical evidence is to be deemed satisfactory and conclusive. We should be careful not to give an opinion that a person has been poisoned, without being able to produce irrefragable proof of the fact."

When the mucous coat of the stomach detaches itself easily from the muscular, so that it and the serous coat remain perfectly isolated, Hebenstreit and Mahon regard this appearance as an infallible proof of poison. M. Orfila confirms this remark, as it respects the *corrosive poisons*. These poisons consist of the preparations of mercury, antimony, copper, tin,

zinc, silver, gold, bismuth, the concentrated acids, the caustic alkalies and their earths, the muriate and carbonate of barytes, and cantharides. They are not all, however, capable of producing the same train of symptoms. In certain cases, the poison is absorbed, and carries its fatal action to the brain, the heart, and other organs. In some instances, it is the corroded membranes of the stomach which act by sympathy on these organs, and suspend their functions, without any absorption taking place. In other circumstances, which very rarely occur, death is the consequence of inflammation of the stomach, irritated by these poisonous substances. Mr. P. then enumerated the symptoms produced by this class of poisons. The whole of these, he observed, were not to be expected in every case of poisoning by corrosive substances. Excruciating pain is, perhaps, one of the most constant; yet even this he has known to be absent in a case to which he was called during the last year. The subject of it was a young man, nineteen years of age, who swallowed at least an ounce of the white oxyde of arsenic, at nine o'clock in the morning, and who expired at four in the afternoon. Sickness; thirst; small and quick pulse; coldness of the body, and particularly of the limbs, the skin of which was of a violet colour; great secretion of saliva, were the symptoms under which he laboured. He did not complain of any degree of pain, nor did he appear to experience any upon pressure on the region of the stomach, or on the abdomen. A few minutes before his death, he placed his hand upon the scrobiculus cordis, and complained of a sensation of heat. His sensorial functions were not in the least degree disturbed. Upon examination of the body, the stomach was found in a high state of inflammation, and the mucous easily separable from the other coats of the stomach; it was studded with small particles of the metallic poison, and was very much altered in its texture, being of a pulpy nature. The duodenum was also highly inflamed, and different portions of the intestinal canal. A case of poisoning by arsenic, unattended with pain, is reported by Dr. Laborde, in the *Journal de Médecine*, Tome LXX. p. 89.

Mr. P. regarded it as a great desideratum to be able to point out the lesions of texture, their seat, extent, and charac-

ter, especially attributable to the different kinds of poison. Those produced by corrosive sublimate are as yet not to be distinguished from such as result from other species of corrosive poison. The lesions of texture produced by arsenic, are generally such as result from inflammation of the mouth, œsophagus, stomach, and intestines. The stomach and duodenum are frequently affected with gangrenous spots, studded with dark coagula, resembling sloughs, but not really such, as is shown by Mr. Brodie, in the *Phil. Trans.* Part I, for 112, and the mucous coat of the stomach is reduced to a reddish brown pulp. Other viscera often present marks of inflammation.

The orator then proceeded to notice those lesions of structure attributable to poisoning with the various kinds belonging to the first class, noticing particularly those arising from antimony, copper, tin, zinc, silver, gold, bismuth, the concentrated acids, the alkalies, and cantharides. The other classes of poisons were then examined in a similar way, and the lesions of texture produced by these enumerated. Mr. P. dwelt thus long on the subject of poison, because the medical practitioner is most frequently called upon to give his testimony respecting them. A review, he remarked, of what had been said, would clearly evince the great difficulty that exists in determining whether an individual has been poisoned; and if so, to what class the poison ought to be referred. The symptoms in common to many diseases are similar to those which arise from the taking of poison. Many cases on record will justify this assertion. The lesions of texture found after death, in many cases of indigestion, cholera morbus, and some other affections, also resemble those witnessed in the examination of the bodies of persons poisoned. It is therefore, of the highest importance, carefully to note every symptom, and to compare the same with the morbid appearances that may afterwards be ascertained to exist. There is occasion to fear, that for want of this knowledge, some individuals have been condemned upon insufficient testimony. It has been shown, by the celebrated J. Hunter, that the stomach of persons dying from hunger, or from any other cause, in a very sudden manner, is frequently found dissolved or eroded in various parts.

Perforations in this organ have been met with in cases where there could not be any reason for attributing them to the having taken of poison. Thus, he concluded, it is evident, that by the aid of *chemical means*, in order to detect the nature of the substance taken; of *pathology*, to examine into and discriminate the character of the symptoms; and of *pathological anatomy*, to trace the connexion between these and the appearances on dissection, we can hope to arrive at any precise or satisfactory knowledge of the subject on which we may be called upon to deliver a most serious opinion. On the subject of wounds Mr. P. remarked, that it was not necessary for him to speak at length, since, happily, the law looks to the intention, rather than to the effect produced. He alluded to the difficulty of establishing criteria to distinguish wounds, whether mortal, probably or accidentally so, or otherwise. The subject of asphyxia, or apparent death, came next under observation, and the variety of causes producing this state noted. To distinguish apparent from real death, numerous methods, he observed, had been contrived; but it is now generally admitted, that nothing short of the commencing appearances of putrefaction can be considered as a satisfactory distinction. To ascertain whether the vital spark be extinct, or merely dormant, is, indeed, a matter of the highest importance: it behoves us all not to consign to the grave those who appear to have expired suddenly, until such means as are recommended to be adopted in these cases have been persevered in for a considerable time. Examinations of the bodies of persons who have died from the causes mentioned should in all cases be made; they will lead to the best result. In cases of the drowned, the heart, and the right side in particular, is found loaded with dark coloured blood; the lungs are livid and distended with dark blood; there is a frothy effusion often of a pale red colour in the bronchia. Hebenstreit states, that the diaphragm in these cases is found bent towards the abdomen: this cannot possibly be true, as a drowning person continues to expire some time after he has ceased to inspire. In those who die by a stroke of lightning, the blood loses its power of coagulating. This, in a lesser degree, is the case with the drowned.

Infanticide and concealed birth form one of those unhappy

cases which frequently demands the presence of the medical practitioner in a court of justice. Every man of feeling will revere the memory of Dr. Hunter for having written the paper on this subject, inserted in the Med. Obs. and Inquiries. That humane Physician possessed extensive opportunities of knowing intimately the female character. To use his own words; he had seen the private as well as the public virtues, the private as well as the more public frailties of women, in all ranks of life. He had been in their secrets, their counsellor and adviser in the moments of their greatest distress in body and mind. He had been a witness to their private conduct, when they were preparing themselves to meet danger, and had heard their last and most serious reflections, when they were certain they had but a few hours to live. That knowledge of women had enabled him to say, though no doubt there will be many exceptions to the general rule, that women who are pregnant, without daring to avow their situation, are commonly objects of the greatest *compassion*; and generally are less *criminal* than the world imagine. The evidences of guilt in these cases should be most circumspectly examined. Those usually stated as such by medical men can be little depended upon. Prejudice operates but too generally against the unfortunate. Mr. P. then adverted to the several inquiries necessary to be made in these cases; and having shown the extreme vagueness of several of them, Mr. P. passed on to the consideration of medical jurisprudence, as it relates to insanity, which belongs to the civil as well as the criminal courts. On this important head Mr. P. brought forward the opinions of Sir Matthew Hale, Lord Erskine, Dr. Haslam, and some other eminent writers; and then concluded the oration with a few remarks on that branch of police which relates to the establishment of houses for the reception of the insane, and on the economy of which the probability of the recovery of the patients confined within their walls must materially depend.

The late parliamentary investigation, he observed, had brought to light the existence of numerous abuses shocking to humanity; and although it had not hitherto excited a correspondent degree of activity on the part of the legislature for

their removal, yet its results cannot but be attended with the most beneficial effects.

“As no greater trust can possibly be reposed in any individual than that which is confided to the keeper possessing absolute authority over a fellow-creature deprived of the exercise of his reason, and unable to state his complaints or obtain redress for his grievances, it is of the highest importance that great circumspection should be exercised in the selection of those individuals to whom the superintendence of the insane is to be committed. They should be men of unblemished character, of benevolent disposition, of calm and dispassionate tempers. They should unite decision of character with gentleness of manner, to ensure at the same time the respect and fear of those subjected to their control. Mild and consolatory language will, it is satisfactorily proved, tend much to the recovery of the insane; whilst a contrary conduct increases the violence of the disease. If coercive measures, or, I would rather say, the exercise of force, ought ever to be employed, it should be directed to its object accompanied with the least degree of irritation possible. The many fatal accidents which have from time to time occurred, prove the necessity which exists for the keeper's utmost circumspection. Every instrument of danger should be removed from the maniac's sight, that no association of ideas may be created to tempt him to the commission of any act of violence either on himself, or to those around him.

“The peculiar feelings and habits of the different maniacs who are associated together, should be most carefully examined into. Lunatics generally retain some of those prejudices and sentiments, which were imbibed previously to the loss of reason. To place a patient afflicted with deep religious melancholy in the same apartment with one who makes a sport of religion, or to associate a person of a timid disposition with an individual of a violent character, is to commit an act of great cruelty towards one of the parties, and highly prejudicial to the recovery of both.

“To strike, or otherwise maltreat maniacs for any part of their conduct, however outrageous, is an evident dereliction of the very principle on which alone the right of restraining

their persons is founded. The dictates of law, as well as of reason, pronounce them guiltless, in a moral view, of every offence they may commit. They are neither held responsible for their actions, nor are they considered to be susceptible of reform from the influence of opinion, or the fear of punishment. When sent to a mad house, it is not intended that their keepers should act towards them as judges or as executioners, but as guardians of their persons, and alleviators, as far as possible, of the sufferings which Providence has attached to their existence. The unhappy fate of the confined lunatic should be commiserated, and the rigour of his confinement softened by an unceasing attention to his personal comfort. The furious and flighty maniac should be gently soothed to reason, and the melancholic should be roused from the stupor of despair, by encouraging a feeling of his own dignity and importance. By such means alone can the purposes of lunatic establishments be accomplished. The exercise of severity within their walls is abhorrent to every sentiment of humanity, and repugnant to every rule of judgment.

“The present mode of licensing houses for the reception of insane persons, he conceived liable to many objections. A defect, and one of a very serious nature, in the existing laws relating to licenses, is the circumstance of those being excepted from the necessity of obtaining them, who take only one lunatic under their charge. Such persons are also free from the obligation incumbent upon the keepers of large establishments, of stating the condition of their patients, and submitting to the visits of an inspector. The dangerous tendency of these exceptions is so manifest, that it is difficult to conceive upon what grounds they have been originally suggested. The evils of mismanagement in public institutions are of trivial consequence, compared to those which may arise to society from the possibility of any individual being consigned to solitary and perhaps perpetual seclusion.”

SELECTED REVIEWS.

The London Dispensatory. By ANTHONY TODD THOMSON, F. L. S., Member of the Royal College of Surgeons, &c. Second Edition, London, 1818. 8vo. pp. 820.

[From the London Medical Repository, for April, 1819.]

THE original compilers of pharmacopœias and dispensaries have been actuated by two very different motives. One being the mutual convenience of the retailers of medicine and of the physicians, or to speak more correctly, the prescribing practitioners, so that the former may always have ready in his apotheca or shop, the drugs and those compound medicines that require time for their preparation, which the latter may be likely to order. The other motive which has led to the publication of pharmacopœias has been that fondness for municipal regulations, and minute rather than general legislation that is so prevalent in Germany, and from thence derived to other nations descended from the German stock. In pursuance of this spirit of legal interference in every action, the colleges or archiaters who have published those pharmacopœias have considered themselves invested with a legislative character, and have in consequence thereof admitted articles into them, rejected others, and ordered certain methods to be followed in the preparations and compositions, as to their judgment has appeared proper; and willed that the other practitioners should abide by their judgment, and use only the articles they prescribe, or take the consequences of their disobedience, by being prohibited future practice within the bounds of their jurisdiction.

The pharmacopœias published by the College of Physicians of London, at least until the year 1745, were certainly written upon the first idea, that of convenience. In 1745, that college imitated their brethren at Edinburgh, in greatly curtailing the number of the drugs and compounds, and in altering the pre-

paration of the latter. It does not, however, appear by any documents or traditions that have reached us, that the London college itself meant to hinder the free exercise of the practitioner's skill and judgment, in using other medicines for the cure of the diseases that fell under their care. The translators of the subsequent pharmacopœias, and the commentators on them, have indeed endeavoured to inculcate this opinion by oblique insinuations, and the denial of any virtues to those substances which have been omitted in the successive revisions and alterations which the pharmacopœia has since undergone.

These translators and commentators, who have thus endeavoured to inculcate that idea which the liberality of the London College itself would probably reject as dishonorable to themselves and to their fellow-practitioners, have not adverted to the difference between practising in commercial cities and in rural villages. Merchants import foreign drugs into the former, and use all the arts of trade to promote their sale, to the prejudice of the native productions. The prescribing physicians are led to order them because they are more certain of their being found in the compounders' shops than the others; and this preference, in like manner, leads the dispensing practitioner to employ them, as having them at hand for use in their quality of compounders: until, in commercial cities, the indigenous productions are left entirely to the use of the amateur or self-practitioners, who are unbiassed in their judgment by any consideration of convenience; or a few professional practitioners who have studied the old authors, and acquired a fondness for their modes of practice.

This preference for foreign drugs naturally passes into the pharmacopœias published in the commercial cities; and although they serve as inventories of the resources of the medical art, which are most usually to be found in the cities where the pharmacopœia is published, yet the country practitioner who should neglect the medical productions of his neighbourhood, which obtrude themselves upon his view, nay, perhaps, even give him trouble to eradicate from his grounds, would be justly accused of ill husbandry, and a lamentable want of economy. It is to be feared, however, from the neglect of

medical botany among those students who frequent the medical schools established in cities, that this is too often the case, and that the country practitioner frequently purchases at a dear rate a foreign drug, adulterated perhaps to half its weight of some inert article, the operation of which may be produced by some rampant weed which overruns his garden.

This work, then, of Mr. A. T. Thomson, as it contains only the articles mentioned by the London, Dublin, and Edinburgh Colleges, is, of course, adapted only for dispensing practitioners in those cities, who are not at the same time engaged in the retail sale of medicines, which would oblige them to keep many articles not mentioned by him: for these it seems a complete work. Being intended as a book of reference, it can scarcely be expected that a reviewer should read it completely over; but from a perusal of such articles as appeared likely to yield a fair specimen of the whole, it seems to be executed with sufficient care. If we except the general idea that the College lists contain the whole resources of the medical art, and the admixture of the compositions of the three Colleges, which is the fertile source of confusion, the only other fault that might be found with the work, taken in general, is that of redundancy; under which head may be ranked the botanical description of the plants which yield many of the foreign roots, barks, &c., but which are not, nor never can be naturalized in these islands; especially as the drugs as sold to the apothecaries are frequently a mixture of the produce of several different plants; the detail of the minerals from whence the metallic substances whose compounds are used in pharmacy are extracted; and the substitution of descriptions for characters in respect to the few indigenous plants that are noticed. When we consider how frequently a work of this kind forms the entire medical library of a dispensing practitioner, we are not disposed to criticise a fault of this kind too severely; although this very redundancy, by increasing the price of these works, may be one cause that those practitioners, contenting themselves with their own experience and a dispensatory, neglect the acquisition of pathological and therapeutic works; the want of which, however, can never be properly supplied by any others.

Observations on a Stridulous Affection of the Bowels; and on some Varieties of Spinal Disease: with an Appendix of Cases. By J. BRADLEY, M. D. Octavo, pp. 283. London, 1818.

[From the Medico-Chirurgical Journal, for April, 1819.]

We have reason to believe that the circulation of a book, and particularly a medical book, is considerably influenced by its title. That of the work before us, though perhaps a very proper, is a very unpromising one, and we *know* that this very circumstance has checked its sale. We shall therefore endeavour to give such an analysis of the volume as will enable the reader to appreciate its value, without any other criterion than his own judgment.

The peculiar noise in the bowels implied by stridor abdominalis, though not confined to either sex, is most peculiar to young females, from the age of twelve to thirty years. Anorexia and dyspepsia either precede or accompany it, from its first attack, together with chlorotic paleness—some degree of emaciation—lassitude. To these symptoms are occasionally added head-ache—pains in the loins and lower extremities. The pulse at the onset, or during the first stage of the complaint is natural, but becomes accelerated towards evening afterwards. Slight rigors, or almost a constant sense of chilliness is prevalent in the day-time, succeeded towards night by some heat, without much increase of the secretions. Some symptoms of gastric derangement accompany the above, with high-coloured urine and sediment. The bowels are constipated; but the *fæces* not morbid.

“The noise within the abdomen returns at uncertain intervals in the course of the day, and is of no limited duration. The period of its continuance, however, seldom exceeds twenty minutes, or half an hour; and always in this stage, while the patient is in an erect posture; for on lying down, it will almost instantly cease, and be no more heard, as long as the body is in an horizontal posture, during the usual time for rest. Whatever is taken into the stomach, whilst the body is

erect, has no inconsiderable influence in exciting or abating this stridulous sound. For instance, after the patient has sat down to a meal, and taken a few mouthfuls, it will invariably ensue, and continue for some time; after which, it becomes weaker, and more and more intermits till it ceases. On the contrary, however, instead of food producing this effect, it often abates this noise, especially when the stomach is empty, and there is faintness, with a sense of craving for food; which is sometimes most prevalent on rising from bed in the morning, about eleven o'clock in the forenoon, and at five or six in the evening. This noise, which is always under the governance of respiration, is, for the most part, similar to the croaking of a frog, especially on inspiration; but on expiration, somewhat less so, and conveying an idea, as if the sound issued from water, and often, before it ceases, like the plaintive tone of a dying animal." P. 6.

If a hand be placed on the left umbilical region, during inspiration, or near the navel, a sensation is felt as if some liquid was forcibly spirted, or dashed against the peritonæum. If deep pressure be made here, great pain is felt in the region of the stomach, sometimes even to cause fainting. There is seldom either tumefaction or discoloration to be observed in these parts of the abdomen; but the hypogastrium is generally swollen, and pain is felt, when the fingers are strongly pressed on each side of the spinous process of the third or fourth lumbar vertebra from above.

The above described symptoms, though insidiously undermining the constitution, often continue a considerable time, with little apparent increase, and without any alteration in the structure of the spine: but the patient will at length experience a systematic derangement and debility. His complexion will become more sallow, or exsanguious, and his spirits more depressed. The spine, at the place above-described, will now be found giving way, and either slightly projecting anteriorly, or to the left side, taking further lateral or oblique directions, till it comes to press upon the posterior part of the ilium, and causes the anterior spinous process of that bone to protuberate a little in the same direction. This occasions the right hip to appear enlarged, by reason of the hollowness between the

ilium and vertebral column being increased. This lateral distortion also, by dragging with it that portion of the abdominal contents which is more immediately attached to the spine, causes the left hypogastrium to appear more swollen than the right, especially in the evening, when the distortion is generally greatest, from the erect posture of the body during the day. Although the patient may still be able to lie easiest upon this than upon the right side, yet the ribs will be found protuberant; and soon after this, from increasing distortion, the patient will be incapable of lying on either side, from pain in the part. Sometimes the spine takes a counter turn, and pointing upwards, raises the right scapula, together with the superior and subjacent ribs; and, if the distortion be considerable, the head and cervical vertebræ will incline somewhat to the left or adverse side. Sometimes the distortion will advance directly forwards, and remain stationary for a long time; in which case the muscular substance of the sacro-lumbalis and longissimus dorsi muscles, on each side of the lumbar vertebræ will be elevated above the spinous processes, so as to form a deep and narrow sulcus between them.

If the distortion continue to proceed laterally, the symptoms of organic derangement become more pressing. The patient now begins to throw up his food, often attended with pain and uneasiness, or tightness across the stomach. Some pain is also felt in micturition.

Feverish accessions now take place, with various symptoms of derangement and irritation in the system; after which dyspnœa and cough, with hæmoptysis or hæmatemesis, in general, supervene, succeeded or attended by diarrhœa, alternating with partial night sweats, particularly about the head and breast. The urine is now high-coloured, and loaded with a muco-purulent sediment. It is needless to say that from this, till the final separation of mind and matter, the unhappy sufferer presents a spectacle of emaciation and debility which is shocking to behold.

“The noise within the abdomen, which generally continues to increase, will often, in proportion to the distortion, be farther augmented, both in sound and duration; and, as soon as the patient, from weakness, is incapacitated from remaining

erect, it will, in this advanced stage, frequently return, even while he remains in the horizontal position." P. 14.

Causes. The remote cause of this disease may be traced, in general, to a scrofulous disposition, combined with a tendency to spinal disease, from the natural conformation of the body. The proximate cause is less clear, but generally depends, according to our author's opinion, "on a certain part of the spine in a diseased state, occasioned from constitutional, but more particularly from mechanical agency. And, as a proof of the close connexion of cause and effect between the spine and stridulous noise within the abdomen, I have never seen the latter to exist, when tolerably well marked, for the last seven years, when the former was absent, or without its having previously existed, excepting in one case; but the former sometimes exists when the latter is not present." P. 28.

"Females who are under boarding-school discipline, about the age of puberty, and rigidly subjected to it, by being compelled to sit many hours in the day with the head erect, and the shoulders thrown backward, are obnoxious to it; especially if the circumstance of having a long spine and a large head, chest, and upper extremities, be present. Hence the sufferer can scarcely fail having pain in the loins without the means of relieving it; and if we take into account the abominable custom of abridging these unfortunate victims to boarding-school avarice, of the quantity of nutriment which nature more particularly requires at this period of life, we may cease to wonder either at the disease, or distortion in the loins, which accompanies this affection, being the consequence. Not only this long-continued posture, to which the discipline of a boarding-school subjects young females, but any occupation where the lower part of the spine is bent forwards, and the shoulders at the same time thrown backwards, with an increase of the superincumbent weight, will dispose to this complaint. Hence we sometimes find young girls, who are nurse-maids, and of a slender form, that are in the daily habit of carrying heavy children in their arms, or those who have borne weights on their heads, are subject to this malady." P. 29.

Our author has not seen more than four well marked cases of this complaint in the male sex. Three of these were about

the age of puberty, and of delicate constitutions when first attacked. In one a very large tumour, apparently of the encysted kind, formed in the left side, exactly at the point where the verberation was most perceptible; and which, after seven months, broke, and discharged about sixteen ounces of purulent matter. Soon after this, colliquative diarrhœa and night-sweats hurried the patient to his grave. In the second case, there were evident signs of internal suppuration, with a similar train of hectic symptoms.

The borborygmus of hysterical females may be easily distinguished from the stridor abdominalis:—the former having a gurgling sound, which is perhaps the most frequent when the patient is in bed; whereas the latter is always governed by the action of the diaphragm, and seldom perceptible when in a horizontal posture; and therefore, easily discriminated from the former. We often, however, meet with a slight croaking of the bowels for a few minutes, which returns frequently, among women troubled with flatulence, and who wear tight stays; but this may not be connected with any spinal disease nor systematic derangement; and may be considered as spasmodic, though under the control of respiration. It is, our author believes, sometimes a prelude to stridor abdominalis, and often an attendant on other spinal affections, especially on distortion, or displacement of the upper lumbar or lower dorsal vertebræ. The beating in the abdomen can scarcely be mistaken for the abdominal pulsation mentioned by Haller and others.

Thoughts on Spinal Affections in general. Under this head, Dr. Bradley makes several pertinent observations on the *mechanical* causes of distortion of the spine. He regrets that Mr. Pott, who had such ample opportunities, “had no idea of the frequent displacement of the lumbar vertebræ.” He draws the following corollary, deducible from observation, namely; “*in proportion as any part of the spine diverges, or recedes from its centre of gravity, or is the more mechanically acted upon, it is the more liable to distortion.*” If this be admitted, he thinks that mechanical agency has frequently no inconsiderable share in the production of this malady.

“And besides, the unexpected amendment in the patient’s general health, as well as in external appearance, too sudden

to be ascribed to the absorption of carious bony matter, on the superincumbent pressure being removed, is another evidence that indisputably proves the frequent existence of this cause, and the necessity of guarding against it." P. 35.

On mechanical Agency in the Cure of Distortion. Our author supposes, that the frequent endeavours of the patient to adopt such postures as are likely to afford himself relief, most probably suggested the principle of such mechanical contrivances as have hitherto been resorted to. These contrivances have been various; but the most effectual, natural, and easy method, is the horizontal posture, which takes off the superincumbent weight from the diseased part.

"It is really surprising, in some cases of distortion, when we have reason to ascribe the efficient cause to mechanical agency, to observe the happy effects of lying in bed; especially if attended with symptoms of febrile excitement, accompanied with irritation, and derangement in the thoracic or abdominal viscera; as insensible perspiration is thereby increased, the body becomes of a more equable temperature, and the rest of the suspended secretions are now restored. The appetite also returns, and the patient grows plump and taller, with a consequent diminution of the curvature." P. 39.

Dr. Bradley conceives, that a disease of the spine may exist under two opposite states, which he denominates active and passive. The symptoms attendant on the *active*, indicate general or local irritation, as slight accessions and remissions of fever; pain on pressing the curvature; pulse accelerated; urine high-coloured, with mucous or lateritious sediment. The distortion here is not large—forms an acute angle, with considerable compression of the medulla spinalis and its consequences. But the most pathognomonic symptom of this variety is a furred tongue, especially towards the root, and generally exhibiting a yellowish tinge, with little or no thirst. In the *second* variety there is more general laxity of fibre, with a soft, and often a less contracted pulse; the urine is paler, and mostly without sediment; the tongue also is cleaner, and there is no thirst. The curvature is larger, more obtuse, and without pain. The paralysis in the lower extremities is less considerable.

In the first, or active variety, as the grand object will be to

abate chronic inflammation and fever, caustics will display their best effects, especially if the progress of distortion be arrested, and no serious inroads be made into the constitution.

“Notwithstanding the good effects of caustics in this variety of distortion, yet the frequent application of a blister will be attended with equal, if not with superior advantages; as it produces, *a priori*, more clearly a double effect, not only by affording a discharge from the part, but, by every new excitement of pain, giving a fresh stimulus to the nervous system.” P. 47.

Leeches or cupping should precede both caustic and issues, if there be pain or soreness in the diseased part on pressure. But it must always be remembered, that the removal of pressure from the diseased portion of spine is the *sine qua non*, whether that removal be effected by mechanically sustaining the superior parts, or by horizontal position.

Spinal Disease, unaccompanied by Change of Structure.—The lower part of the dorsal, and the whole of the lumbar vertebræ, as well as the sacrum, are much exposed to sprains and external injuries. The immediate effects of these vanish, and a long interval of undisturbed health, with the exception of some transitory pains in the part, on catching cold, may ensue. But ultimately, the patient is frequently seized with a new order of symptoms, which are often considered as having no relation to the real cause. Hence a secondary disease supervenes, which assumes such an anomalous character as no experience or physiological acumen is always competent to unfold.

At the commencement of this new affection, which is generally called forth by a scrofulous taint in the system, the patient complains of dyspepsia, with languor and mental despondency. The countenance assumes that sallow, exsanguine appearance so common in spinal disease. Slight fever accompanies these symptoms; the tongue is foul, especially near its root, and the patient is chilly and susceptible to cold. Sometimes, however, the complaint is ushered in by a smart attack of fever, supervening after some lapse of time, to injuries done to the spine. The pain consequent on these spinal injuries is often so trifling as scarcely to be felt, except when the patient

has fatigued himself with loco-motive exercise, or been some time in an erect posture, especially if at the same time the super-incumbent weight be increased, either by carrying burthens, or by manual exertion. The proper remedies here are topical bleeding and caustics, to the use of which a certain reaction of the vascular system will ensue, indicating a diminution of the latent disease.

“Sometimes, when the seat of the disorder is in or about the lowest dorsal vertebra, pain or soreness is felt in the right hypochondriac, epigastric, and umbilical regions. The abdomen is tumefied in consequence of wind and costiveness, attended with a slight degree of soreness and discolouration; which, together with a defect of nervous energy, constitute a train of symptoms that is mistaken for hypochondriasis. Under these circumstances there will be sometimes a slight ptyalism, which is no very uncommon symptom of spinal disease, particularly of the dorsal and lumbar vertebræ. There will also be occasionally about the clavicle, a dull pain, and the tunica albuginea will exhibit a slight icteric tinge. The urine will be somewhat high, and inclining to the orange colour, but seldom containing any bile. The bowels here are also constipated, but the stools appear natural, though occasionally dark or ash-coloured. From a collective review of these symptoms, the practitioner may be apt to suspect some disease of the hepatic organs, and advise the use of mercury; but, on trial, he will find no advantage from it, either in small doses as an alterant, or in saturating the system with it.” P. 81.

When this disease occupies the uppermost lumbar vertebræ, it will sometimes simulate nephritis, or calculus, or lumbago; but may, in general, be distinguished from these affections by attending minutely to the symptoms which are peculiar to them. When the species of chronic or sub-acute inflammation is confined to the lowest dorsal, or the uppermost lumbar vertebræ, and not attended to in its incipient stage, the consequence will sometimes be either lumbar or psoas abscess.

There are few affections, as our author justly remarks, to which the human body is subject, that are more obscure, or more frequently mistaken, than chronic inflammation of the spine, unattended by any displacement of the bones. 1st. Be-

cause little pain is usually felt at the place of mischief. 2d. Because the irritation is often in the parietes of the abdomen, in a transverse direction with the disease in the spine. 3d. Because there is frequently a sympathetic pain on one side of the head, which is often so very distressing as to engross the attention of both patient and practitioner. 4th. Because dyspepsia, pyrosis, vomiting, tightness across the præcordia, and other sympathetic affections contribute to mark the real seat of the disease. Dr. B. thinks he has observed the pain in the head, in general, confined to the right side, especially when the spinal disease was in the left. It often begins just below the mastoid process, and passes in the direction of that part of the temporal bone behind the ear, extending itself upwards, so as to occupy the right side of the occiput. In the night there is commonly a remission of the pain, but it returns with increased violence in the morning. It ultimately affects the power of vision. A part that is very liable to these sympathetic pains is a situation about, or at a short distance from the anterior spinous process of the ilium, and mostly on the left side. The epigastrium, however, is the most frequent seat of the sympathetic irritation, when the primary disease is in the opposite part of the spine. The whole of these sympathies are not only painful, but so embarrassing as entirely to engross the attention of patient and physician. Hence the sufferer has, as we have often known, been harassed by a long-continued course of severe treatment, without gaining any permanent advantage; whereas, had remedial measures been directed to the immediate source of the mischief, a cure would, most probably, have been obtained.

The sacrum is often the seat of the disease, and requires no ordinary discrimination to detect it, particularly in its nascent state. The prominent features of the symptomatology in this case are, according to Dr. Bradley, pain in the sacrum; pulse small and contracted, not much accelerated; anorexia; languor; constipation of the bowels; tongue more or less coated; sense of chilliness or rigors in the day time; slight degree of pain and weakness in the lower extremities; sometimes tenesmus, or uneasiness about the rectum. This state will continue for a longer or shorter period, when there will be a

great aggravation of all the symptoms. This aggravation is often the precursor of suppuration, forming either externally or internally, attended with caries of the bones. If the matter form outwardly, in young subjects, recovery may take place; but if internally, and after puberty, death is generally the result.

“In this country, where scrofula is so insidiously prevalent, we often detect diseases of the spine, such as form the subject of this chapter, by attending to their sympathies, which have been treated as idiopathic affections, to the distress and negative advantage of the sufferer. Dyspepsia, which is symptomatic, and often accompanied with those sympathies of the head already described, and which is often thought to be the occasion of them, is considered as idiopathic; and, when the tonic plan of treatment is adopted in consequence, it is mostly productive of injury, by increasing systematic as well as stomachic derangement. When, however, this effect is produced by tonics, there will always be ground, under these circumstances, for suspecting some spinal affection.” P. 93.

The Disease in Children. When this affection is attacking the spine of a child, the mother or nurse will observe that the little one is more dull than usual, is weaker, and more disposed to be quiet than on its legs. She will also observe, that the child seems uneasy in certain positions, particularly when laid on the lap. To detect the seat of the disease requires some address. The surgeon should run his fingers gently along both sides of the spinous processes of the vertebræ; and he must do this several times, in order to give the child the idea of being played with. After gaining the confidence of the little patient, he may then venture to increase the pressure, which will soon point out the diseased part, evinced by the shrinking or crying of the child. The examination is again to be repeated along the whole spine, with the addition of some little pressure uniformly applied; and if the child complains most at the same point, which is often between the middle dorsal and middle lumbar vertebra, the practitioner may then conclude that he has discovered the seat of the disease. Some fever and a furred tongue occasionally accompany this affection in children. Here Dr. Bradley glances at a certain species of

paraplegia, or paralysis of one or both of the lower extremities, which is mostly peculiar to children about two or three years of age, and neither attended with distortion, nor proceeding from any known cause; as the little sufferer is generally in apparent good health previous to the attack; but which is succeeded by symptoms of reaction, such as thirst and a furred tongue, with increased heat and perspiration in the night.

“I have also observed, that in proportion as the lower extremities are paralysed, the patient will exhibit signs of animation and bright intellects; and hence he always excites peculiar interest and commiseration, on beholding him dragging behind him his dangling limbs, and perhaps, heading a little troop of playful companions, and directing all their childish evolutions.” P. 96.

This is a very curious phenomenon, but seems to be accountable on the well known principle that when one organ is functionless, another organ will become capable of increased action.

In proportion as the limbs become shrivelled and flabby, all the rest of the body will be directly increased in muscular energy.

Cure of Disease of the Spine without Distortion.—At the onset of the disease, and before much progress is made, repeated abstractions of blood from each side of the spine, by cupping in adults, and leeching in young children, will often supersede the necessity of any farther local means; but when the complaint has advanced farther, a more permanent drain is necessary to prevent a return of the complaint.

“Caustic issues or a copious drain are therefore our principal dependence; and, if timely had recourse to, will be productive of the happiest effects; but to ensure which, it will be necessary, not only to make the caustics penetrate deeply, so as entirely to destroy the cutis, but so extensive as to comprehend, if not the whole, a very considerable portion of the integuments covering the subjacent disease; the propriety of which will be seen on the well known principle, namely, the effects of a drain on local disease being always inversely as to its distance.” P. 101.

Our author is decidedly in favour of large caustics, and

he objects strongly to the premature removal of the slough, as it deteriorates the discharge, and the sore is thereby rendered foul and unhealthy, from part of the eschar remaining, and which will be slower in digesting off, than if the slough had never been interfered with. As soon as a copious and healthy discharge is obtained, all symptoms of local and general irritation subside; and in proportion as this is kept up, the patient will, in general, progressively recover; but if this discharge, from any cause, be suddenly diminished before the disease be subdued, and which is sometimes the case, the effects are soon perceived by the failure of appetite, and a partial recurrence of the general symptoms. Although the caustic eschar ought, in general, to be allowed to slough off without the intervention of art, yet as some application must be employed, the common resin ointment, either alone or mixed with spermaceti ointment, spread thinly on lint and covered with adhesive plaster, may be used.

“I have seldom made caustic issues in adults, in any species of spinal affections, less than two inches and a quarter in length, and one inch and one-third in breadth, and sometimes of greater dimensions; and when the disease is confined to one, or even to two vertebræ, these prove excellent drains.” P. 106.

In addition to the use of these drains, the medicines already recommended in cases of local and general excitement will be proper; and after the inflammatory symptoms are subsided, some mild tonic may be given. Bark, however, or any other stimulating tonic, should be ventured on with caution; for as long as the tongue exhibits furr, we ought to be sceptical as to their propriety. When, however, the appetite ceases to improve under the use of these drains, and the tongue is but little furred, the pulse remaining soft and languid, and the urine little changed from the healthy state, tonics may be ventured on.

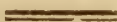
“Although copious drains are strongly recommended, yet they are not always successful. When the pulse is under a hundred, the greatest advantage may be expected from them. When it ranges from this number to one hundred and ten, their effects are slow, and more uncertain; but if still further increased, and the tongue display a thick and brownish furr—

and especially if there be any visceral disease, attended with colliquative discharges, copious drains are seldom adviseable, as they are productive of no permanent advantage, and sometimes are injurious, and consequently may expose the young practitioner to much censure." P. 108.

As another means of cure, it will always be adviseable to take off the superincumbent pressure, on the principle of abating irritation, by either adopting altogether the horizontal posture, or some well-adapted mechanism. In the first stages of the disease, patients will seldom submit to these restrictive measures, but in the advanced stadia the remedy is indispensable; for if caries and consequent distortion ensue, after the age of puberty, the patient generably dies tabid.

We have now given a very full analysis of the didactic and descriptive part of Dr. Bradley's Work, two-thirds of which is composed of an Appendix of Cases illustrative of the foregoing precepts. Of these cases, which are very numerous, we shall not attempt to give any account, but refer to the work itself.

Dr. Bradley is evidently a man of accurate observation, and patient indefatigable investigation. Perhaps, however, he has been too prolix, both in his descriptions and cases, which indeed is the common fashion, or rather failing of the times, and is therefore excusable. The work is a very valuable addition to spinal pathology.



1. *Report of the Select Committee on Contagious Fever in London: Ordered by the House of Commons to be printed, 20th May, 1818. pp. 52. Folio.*
2. *A Bill to establish Fever Hospitals, and to make other Regulations for the Relief of the Suffering Poor, and for Preventing the Increase of the Infectious Fever in Ireland: Ordered by the House of Commons to be printed, 19th May, 1818. pp. 12. Folio.*
3. *Reports of the Practice in the Clinical Wards of the Royal Infirmary of Edinburgh, during the Months of November and December, 1817, and January, 1818, and May, June, and*

July, 1818. By ANDREW DUNCAN, junior, M. D. F. R. S. E. Fellow of the Royal College of Physicians, Professor of Medical Police, and of Medical Jurisprudence in the University of Edinburgh, and one of the Physicians to the Royal Public Dispensary and Lunatic Asylum. Edinburgh, 1818. 8vo. Constable & Co.

4. *A Succinct Account of the Contagious Fever of this Country, exemplified in the Epidemic now prevailing in London; with the appropriate Method of Treatment as practised in the House of Recovery: To which are added, Observations on the Nature and Properties of Contagion, tending to correct the Popular Notions on this Subject, and pointing out the Means of Prevention.* By THOMAS BATEMAN, M. D. F. L. S. &c. Physician to the Public Dispensary, and Consulting Physician to the Fever Institution in London. 8vo. pp. 177. London, 1818. Longman & Co.
5. *Medical Report of the House of Recovery, and Fever Hospital in Cork-Street, Dublin.* By F. BARKER, M. D. Honorary Fellow of the King's and Queen's College of Physicians; Professor of Chemistry in Trinity College, Dublin; and Senior Physician to the Hospital. 8vo. pp. 80. Dublin, 1818. Graisherry and Campbell.
6. *Observations on Contagion.* By WHITLEY STOKES, M. D. Honorary Fellow of the College of Physicians; Lecturer on Natural History to the University of Dublin; late Senior Fellow of Trinity College; and late Professor of the Practice of Medicine. 8vo. Dublin, 1818.
7. *Statements relative to the present Prevalence of Epidemic Fever among the Poorer Classes of Glasgow. With some Suggestions for affording more adequate Assistance to the Sick, and for Checking the further Progress of the Contagion: in a Letter addressed to the Honourable the Lord Provost of Glasgow.* By RICHARD MILLAR, M. D. Lecturer on Materia Medica in the University, one of the Physicians to the Infirmary, and to the Glasgow Lock Hospital. 8vo. Constable and Co. 1818.
8. *Practical Observations on Continued Fever, especially that Form at present existing as an Epidemic; with some Remarks on the most efficient Plan for its Suppression.* By ROBERT

GRAHAM, M. D. Regius Professor of Botany in the University of Glasgow; President of the Faculty of Physicians and Surgeons; and one of the Physicians to the Royal Infirmary, Glasgow. 8vo. Constable and Co. 1818.

[From the Edinburgh Review, for March, 1819.]

It may be questioned whether, in the present state of society, the epidemical visitations of a contagious disease are not productive of more misery than war itself—fertile, as it unquestionably is, in every species of calamity. The actual victims of war are not only numerically fewer, but, for the most part, belong exclusively to a class openly and almost voluntarily devoted to war horrors:—while epidemical sickness is an evil that threatens indiscriminately every class of the community; and is chiefly afflicting, from its invading that cherished sanctuary of domestic life, in which the happiness of every individual must mainly centre. The universality of the infliction; the anguish of the immediate sufferers; the distress of relatives, and often the subsequent poverty and desolation of families, conspire to fill up the measure of misfortune, and give to the destructive operations of an epidemic, a character of the deepest gloom,—which is not, like the fatal scenes of a battle field, cheered by one spark of valor or patriotism, nor redeemed by one consoling sentiment of duty or fame.

The unhappy prevalence of Contagious Fever for the last two years, not merely amongst the poor and destitute, but amongst those whom opulence has placed far above what are generally held to be the causes of infection, forms an evil, which, if not altogether novel in its nature, is at least so in its extent. Its causes, therefore, and the means of arresting its present ravages, and of preventing them in future,—are topics that should not, in circumstances like the present, be left to the discussion of physicians, but should be taken up by the politician and the philanthropist: and accordingly, it is gratifying to find, that the matter has been deemed of sufficient importance to deserve parliamentary investigation. In our humbler province, we should wish to do something in the same good cause; and have for this purpose, selected the able tracts whose titles are prefixed to this article. Our object, however, is not

to analyze the mere medical information they contain, though that, we readily admit, is very respectable, but to convey to our readers some more practical and popular considerations on fever in general, and particularly on the present epidemic.

From history we learn, that, in no era of the world, has society been exempted from epidemic fever; but it has always committed its chief ravages at those distressing junctures when war and scarcity had been extending the dominion of evil beyond its ordinary limits. For example, after every irruption of the Goths into the Roman provinces, epidemic sickness was sure to follow, and to thin the remains of population which the sword had spared. Indeed, on most occasions of general or local calamity, whether in ancient or modern times, contagion has made known its destructive presence; and in this way has the poison been perpetuated from age to age, and from year to year. From the remotest periods, down to the present day, it has been reproduced an infinite number of times, and in an infinite variety of constitutions, without any perceptible alteration in its character or laws. Sometimes it has extended only to a few; at other times it has spread amongst multitudes: yet, with whatever scope of operation it has appeared,—whether epidemical, and ravaging a kingdom, or confined to a hamlet or a hut,—it has never become wholly extinct; but has lurked, a fatal spark among the neglected embers of society, ready to burst forth into a blaze at every favourable opportunity.

In the present epidemic, the same effects have resulted from peace, that were wont, at other times, to result from war: for it is well known, that it was not till after the return of peace, when a suspension of trade and pecuniary embarrassments from a war of unexampled length and expenditure, began to press upon the population, by privations of unusual severity, that sickness became generally prevalent. None of our readers require to be reminded of the unprecedented stagnation of every branch of commerce and manufacture which marked the gloomy years of 1816 and 1817; and the consequent scarcity of all kinds of employment. The labouring poor who, in ordinary years, had maintained themselves and families in tolerable comfort, were thrown out of work by thousands, and abandoned not only to want, but to that heart-breaking depression of spirits, which

we firmly believe to be more deleterious to the health and functions of the human frame, than inclement seasons, or any ordinary morbid causes, of a description merely physical. To poverty and mental depression, debility from insufficient nourishment was speedily joined; for the failure of the crop in 1816, superadded the inflictions of providence to the pressure of political adversity. Had it not been for the multitude of our charitable establishments, and the unusual wide-opening of the hand of private benevolence, we verily believe that hundreds would have died of actual famine, and exhibited, in these kingdoms, a calamitous set-off against any afflicting occurrences of this sort recorded in history. Even as it was, the distress was enormous, both in extent and degree; and we have in our possession details of suffering, and of the disgusting substitutes for food to which the poor were driven, that would produce horror, as well as pity, in the minds of our readers, were we to state them: we shall therefore pass over the shocking minutiae of this subject.

Want of fuel, and of proper cloathing, were also evils of first-rate magnitude; and, with their necessary consequence—filth, rendered the wretchedness of the poor scarcely susceptible of additional aggravation. Can it be wondered at, then, that febrile contagion, which is seldom dormant in large cities, should spread widely in such a mass of apt materials,—or that, when fanned by the sigh of despair on the one hand, and of hunger on the other, it should be blown up into one of the most raging epidemics that has appeared for many generations?

Scarcity of labour, and the misery and the privations of every sort which thence result, are but the first in a train of greater evils that, in such calamitous times, assail the poor. Suffering, too often leads them to vice and to crime. The want of intellectual resources leaves them accessible to every sort of immorality, but more especially to a degrading intemperance; for, in the temporary excitement of intoxication, they hope to assuage that gnawing canker of the mind, which is little less intolerable than hunger itself. Again, how frequently does the poor man's conviction, that 'the world is not his friend, nor the world's law,' goad him on to theft or robbery,—to the reck-

less destruction of a fellow-creature, or of himself! And surely, if misery thus predisposes him to moral evil, we may cease to wonder that it should also render him greatly susceptible of natural disorders.

In this hasty sketch, we have touched upon the chief moral and physical causes of the epidemic; and these are, in our view, reduced within very narrow limits; namely, an original, unextinguished contagion—fostered by these accidental circumstances, viz. depression of mental energy from want of employment, &c.; depression of bodily vigour from want of nourishment; and, in all probability, a peculiar constitution of the atmosphere not hitherto distinctly explained. We are aware that many able authors hold, that concomitant circumstances alone, such as foul air, filth, putrid animal effluvia, cold, wet, fatigue, and bad diet, will generate contagion, even though none previously existed. Dr. Bateman, in particular, seems still to hold this doctrine, and expressly maintains, that want of nourishment has been the great cause of the present epidemic. His words are—

‘The history of all nations affords abundant evidence of the constant concurrence of dearth and pestilence. The pestilence appears to have generally assumed the character of a contagious fever, modified in its form, and more or less virulent and fatal, according to the circumstances under which it occurred.’ p. 1.

‘As epidemic fever *is unquestionably generated, in the first instance*, by defective nutriment; so we cannot doubt that it continues to *originate* in many successive individuals, during the existence of its cause, independently of any communication with each other,’ &c. p. 11.

Now, we will confess that this doctrine appears to us not only to be erroneous, but to be the very reverse of true: For we believe that deficient nutriment, provided it do not go the length of impoverishing the blood, and thus depraving the solids, instead of being favourable to the existence of fever, is the very reverse; inasmuch as it lowers the tone of the constitution, and lessens the liability to all diseases of increased excitement. Without speculating about the relation of fever to inflammation, or stopping to inquire whether the increased action in the system which follows the application of conta-

gion is an original part of the disease, or merely an exertion of the medical powers of nature, we are sufficiently borne out by facts when we say, that it is to this increased action, or to the exhaustion which *necessarily* follows it, that fever owes its general fatality. By consequence, it is reasonable to believe, that in those who have been scantily fed, the disease is less apt to occur, or if it does occur, the increased motion of the blood-vessels is of a less durable and vehement character, and infinitely more manageable, than in those who had been lolling in repletion and indolence up to the moment of attack; and in whom the fibre is necessarily more rigid, the vessels more prone to engorgement, and the disposition to undue excitement more exalted. Nor is this opinion merely theoretical; we have the evidence of many facts confirming it, did our limits permit us to state them. Out of the many, however, we may mention the very striking one, that, in the present sickness, fever has been proportionally more fatal among the rich than the poor.

The general principles, therefore, which we have been explaining, remain unshaken, and are summarily these:—that exclusively of the febrile diseases attended with eruptions, such as small-pox, measles, &c. there is but one species of contagious fever, namely, typhus:—that this disease admits of several varieties, but that all of them arise from specific contagion as their sole cause,—a cause, without which all other auxiliary circumstances would be inefficient. Nevertheless, we are decidedly of opinion, that such auxiliary circumstances are essential in paving the way for the operation and dissemination of the poison, by begetting a general state of predisposition. In fact, situated as we are, there is scarcely an influence or element which may not, by its excess, produce in our system the unfortunate state of preparation we allude to. Adversity may agitate, intemperance may derange, excess of study or of fatigue may exhaust, and want of food may debilitate;—thus rendering the body more liable to the power of contagion, or more easily thrown into fever by a dose of the poison so trifling as, in other circumstances, would have been harmless. Nay, further, we do not absolutely deny that a series of these predisposing circumstances constantly applied, may, by their incessant operation, excite fever in the system without the aid

of contagion at all; but the malady thus excited, though often mistaken for the genuine typhus, is only an occasional—incidental—or, to use medical language, a sporadic disease; and as it is not derived from contagion, so it never becomes contagious in its progress, or infects the healthy who hold intercourse with the sick, unless its original nature is changed by crowding and deficient ventilation. But the more ordinary way in which these noted predisposing circumstances exert their effects is, by rousing into action the contagious virus already received into the animal system;—or, in other words, by becoming what physicians call ‘exciting causes.’ There is every reason to conclude, that contagion is often inhaled, without any fever being the consequence: and, we firmly believe, this happy exemption would be more frequent, were not the latent powers of the poison accidentally fostered and evolved by the assisting circumstances so often referred to.

We have already seen, that these ‘*lædientia*’—these injurious circumstances—are partly of a physical and partly of a moral nature: the chief of the former order are, want of nourishment, inebriety, fatigue, and cold; and of the latter, grief, mental anxiety, or despair. It would be difficult to say which of these two are the most ruinous to health: the operation of the former is, to be sure, more intelligible; yet the influence of the latter on the vital functions in health and disease, is a subject of most interesting speculation to the physician and the moralist. Many phenomena in the history of our species lead us to believe in the governing power of mind over matter, to an extent, at first sight incredible. How often have energies, purely mental, enabled men to retard the assaults of sickness, and even the chilly approach of death! On the other hand, a sudden relaxation of these energies lays them open even to the minor causes of disease, or perhaps subjects them to ideal calamities. It has long been remarked, that in armies, or other large bodies of men, disease makes little progress while the mind is strongly engaged, and the exciting passions steadily kept alive by enterprize or success; but that, as soon as great reverses are experienced, and mental depression ensues, diseases make very great havoc,—being increased not only in their general number, but in their individual fatality. What

takes place after a disastrous campaign, was pretty accurately shadowed out in that gloomy season of public adversity which reigned during the early part of the present epidemic, and which rendered its mortality, as might be expected, greatest at first.

Although the predisposing circumstances already pointed out must be highly instrumental in exciting and diffusing typhus, still, it is evident, something more must happen ere that fever can prevail as an epidemic. To be convinced of this, we have only to recollect, that at all times, in a crowded society like ours, contagion must meet with mental depression from moral causes, and exhaustion from scarcity, with all their sequelæ of filth, intemperance, and the like, ready prepared to aid its operation. But seeing that, even under this conjunction of circumstances, epidemics do not prevail at all times, nor even very frequently,—it is manifest some additional auxiliary must yet be wanting. The contagion of measles, scarlet-fever, or whooping-cough, like that of typhus, is never wholly extinct in any country; yet these diseases only prevail epidemically during particular seasons:—It therefore becomes a very interesting point in medical physics, to determine the reason why they spread some years so much more widely than others. We cannot say that we have yet met with any very satisfactory solution of this curious and interesting question. The phenomenon, we are afraid, cannot be explained: and we must be content, in our ignorance, to refer it to the influence of what was styled by Sydenham and the older physicians, ‘peculiar constitutions of the air’ during certain years, or portions of years, disposing the body to take on one kind of diseases in preference to another. What this peculiar state or constitution of the atmosphere favourable to epidemics is, we know not: yet we cannot help believing that it exists; and that the occult quality, whatever it may be, has no relation to the thermometrical or barometrical conditions of that fluid. Whether it is at all connected with its electrical states, it would be fruitless to conjecture. Sydenham conceives, upon slight enough grounds, that ‘it proceeds from a secret and inexplicable alteration in the bowels of the earth, whereby the air is contaminated with such effluvia as dispose bodies to this or

that disease as long as the same constitution prevails, which at length, in a certain space of time, withdraws, and gives way to another.' For our parts, from attending to the history of health and disease during a succession of seasons, we are persuaded that changes of mighty importance take place in the air we breathe, without their being at all appreciable by either our eudiometers or hygrometers: and this we must, at present, be satisfied to receive as an ultimate fact, for which we cannot account.

The existence of a special condition in the air, as the leading cause of the spreading of various epidemics, is by no means without close analogy in its favour. For example, every one knows that, in the East-Indies, liver complaints are remarkably frequent; though the climate, so far as depends on heat, moisture, &c. is entirely like that of the West-Indies, where such complaints are comparatively rare. Again—it is a matter of almost daily observation, that an east wind is highly disagreeable to valetudinarians, and unfavourable to the cure of some diseases: it has even been known, in the course of one night, to change for the worse all the ulcers in a large hospital. This, however, must be attributed to some latent peculiarity in the wind that now and then blows from that quarter; for neither its cold, its dryness, nor its barometrical properties, can account for the effects it occasionally produces.

This unknown constitution of the atmosphere, then, we take to be a *sine qua non* in the production of epidemic fever; and that, if contagion is a prerequisite to render the spreading of the disease possible, the aërial change is also a prerequisite to render that spreading probable. When these two principal causes meet with the favouring circumstances formerly explained, all of them act and react interchangeably upon each other; and the result of such a complication and union of noxious agencies, is an epidemic such as we see it.

While on the subject of atmospheric influence, we may add a word on the received opinion, that cold is peculiarly favourable to typhus contagion; and that atmospheric warmth extinguishes it altogether. The latter proposition, we think, may very reasonably be doubted, since there are no facts that we know of directly to confirm it; and all analogy is against it;

so that we might rather expect, *a priori*, that our fevers should be aggravated by heat, as all the violent fevers of southern climates, arising from marsh exhalations, are rendered more virulent by high temperature. Plague also—the most contagious of all human diseases—rages most violently in such degrees of warmth as are more nearly allied to extreme heat than to cold. On the whole, we are rather inclined to think, that heat operates beneficially upon typhoid contagion, only by giving occasion to its being dissipated and diluted, and thereby rendered innocuous: because, in hot weather, the abodes of disease and filth are necessarily thrown open to the winds of heaven, and due ventilation, often fruitlessly recommended by the physician, now that it becomes indispensable as a matter of common comfort, is enforced by the poor themselves.—As corroborating this opinion, we refer to Dr. Barker's valuable Report; where he has shown, by a table, that the fever in Dublin went on, during the whole summer, progressively increasing.

It will not be irrelevant to add a few words on the manner in which the matter of contagion may be admitted into the body. It may be conveyed into the stomach by the saliva; or it may be absorbed by the skin, in some instances: but we are convinced, that by far the most ordinary way is inhalation by the lungs. It is in this way applied to that delicate membranous expansion which covers all the minute blood-vessels, distributed with such an infinitude of branches around the air-cells of the lungs. We have little doubt but that the poison, thus applied, is absorbed by the blood, and thus finds its way into the course of the circulation. Besides its general effects on the sympathies of the nervous system, it seems to deteriorate the mass of blood itself, and render it unfit to maintain the irritability of the heart, and the excitability of the brain. Some of the most conspicuous phenomena, particularly in the last stage of fevers, are referable solely to this depravation of the blood. On this matter, however, we shall take occasion to say more hereafter.

This is all that we think it necessary to observe on the causes of the present epidemic. We must now say a word or two on the means of cure; and in so doing we shall chiefly aim at removing popular prejudices, on points where they are most per-

nicious. We may remark, by the way, that the only safe rule for the treatment of typhus is, that there should be no general rule at all. Each epidemic varies in its character; and almost every case of the same epidemic has circumstances peculiar to itself, which must modify the treatment. We often observe a highly malignant disease produce one of an opposite type in others, and the contrary: so that there is no judging *a priori*, or from any thing but the actual symptoms, what the precise treatment in any given case ought to be. Yet, were we bold enough to venture on any thing like a general maxim in physic, we should certainly lean to the side of the evacuating system,—sensible that this method, invariably pursued, would do infinitely less harm than the opposite.

The symptom in fever that first alarms a patient's friends, is debility; and, to remove it, all their well-meant efforts are earliest directed. But it is dreadful to think with what lamentable consequences they are often attended. We firmly believe, that the fear of debility has been the destruction of thousands of lives, by the rash treatment to which it has given birth. It is quite a received axiom amongst the poor, that weakness must always be met and supported by cordials; and that strength can only be communicated to the languid frame through the medium of generous diet. How often do we see their fevers, during the first three or four days, when alone medical treatment can be of much avail, not merely neglected, but—what is infinitely worse—goaded into malignity by stimulating treatment! The unhappy patient is put to bed; warm malt liquor, or even spirits and water, are administered at intervals; and the stomach is loaded with nourishing broths or cordial panadas; and thus every thing is hurried on from bad to worse. We can scarcely conceive any thing more important to the safety of society at large, than to convince ignorant and prejudiced persons of the folly and danger of such a practice. To the admonitions of the professional man they too often turn a deaf ear; or they comply with them very imperfectly, and even, perhaps, act in direct and dogged opposition. This evil well deserves the notice of the humane and enlightened. It is only from the kind advices of those who, from their rank in society, or other causes, have influence

over the minds of the lower orders, that we can expect a salutary reform in this particular.

If there is any thing true in medicine, it is, that debility, during the first days of fever, is only apparent,—and that the first stage is one of *oppression*. Instead of increasing this oppression,—instead of spurring the over-wrought vital powers by ill-omened stimulants, do not nature and reason point out that the system should be unloaded and tranquilized, and that the stomach should be relieved from the drudgery of digestion? Even admitting, for a moment, that nutritious food were required under such circumstances, it is quite obvious that it could never be digested nor assimilated: it must lie as an uneasy load, and embarrass those vital functions which it cannot sustain. As well might we screw up the barometer in order to bring fair weather, as thrust down nourishment into a powerless stomach and a feverish frame, in order to recall strength.

There is, among this class of society, another cardinal error; to wit, that of forcing a perspiration in fever, ‘to carry it off,’ as their phrase is. Misled, in the first instance, by the sense of chilliness generally present, and by the sweat which nature now and then, perhaps, employs as the means of dissolving the febrile paroxysm, they bury the unlucky patient in bed-clothes, and every refreshing access of air is carefully excluded: perhaps, to add to his torments, a fire is kindled, and the sufferer lies sweltering in clammy oleaginous perspiration, panting for breath, and rapidly becoming exhausted by the murderous kindness exercised towards him. Surely, than this, nothing can be more cruelly injudicious; for every medical man, with the least pretension to experience, must have seen cases on cases where, even after the most profuse perspirations, whether breaking out naturally or elicited by art, no permanent relief of the febrile symptoms has followed. This system of forcing perspiration, then, is useless, and worse than useless; for it is sure to do harm, by augmenting and fixing determinations of blood to the brain and other parts essential to life, and by causing an accumulation of the stimulus of morbid heat. If perspiration be a desirable object, we know of no more likely means of bringing it out, than to take off the febrile

stricture of the skin by the free admission of cool air, the use of cool drink and light bed-clothes: but, indeed, sweating is generally to be regarded rather as the effect, than the cause of the departure of fever. This should never be forgotten.

The use of emetics at the beginning of the disease has been sanctioned by so many great physicians, that it has now become a popular practice, and is often resorted to at first without any regular medical advice. The practice in this indiscriminate way, is certainly liable to many grave objections. The exertion of vomiting powerfully propels the blood to the brain, and sometimes gives rise to such an irritability of stomach as all our subsequent efforts cannot allay. Surely the more obvious benefits of emetics as evacuants, may be secured in many cases by purgatives, which do not expose the patient to the same dangers.—We do not deny their great utility in many cases; for example, where, previously to fever, the stomach has been over loaded by indigestible food: we also admit that the succussion their operation gives to the whole system is useful in removing inward congestions of blood, and developing the necessary and salutary stage of moderate reaction. What we contend for is, that the unlimited, and therefore empirical, employment of them in all cases, even when the cold stage is gone by, is frequently unnecessary, sometimes dangerous.

We next come to speak of another remedy which has been said to possess the power of arresting fever, and which, by its high promise of general benefit, a few years back, greatly excited the hopes of physicians and philanthropists:—we mean the affusion of cold water on the naked body. This practice was introduced to general notice by the late amiable Dr. Currie, whose distinguished talents, both as a physician and a man of letters, will be long remembered. The remedy, indeed, was by no means new: and was probably resorted to in the very infancy of the healing art as a natural and summary cure for excess of heat. In proof of this, we have the testimony of travellers, to show that savage nations, both in the Eastern and Western hemispheres, have been in the habit, from the remotest times, of treating their occasional fevers by ablutions with cold water; and we think this simple expedient is very likely to have suggested itself to rude minds. (See Bancroft's

Essay, p. 95.)—We are far from saying this with any view of lessening the merit of Dr. Currie: for ‘if,’ as Malpighi observes concerning our illustrious Harvey, ‘in arts and sciences he is properly to be deemed the discoverer, who by a proper investigation unravels Nature’s perplexities and calls in reason and experience to support, and facts to confirm,’—then truly will Dr. Currie be esteemed the discoverer of this remedy.

After many patient and persevering trials of cold affusion in the fevers of all climates, it seems to be now laid aside almost by common consent. That it does not possess the power of cutting short the disease, is admitted on all hands; and the conclusion we have formed is, that its effects are beneficial, so far as they go, but transient. We have never seen it effect any premature solution of the complaint, nor have we often been so fortunate as to witness its tendency to sleep and perspiration. But though it possesses not those commanding effects which its benevolent proposer taught us to look for, and though the relief it produces is but temporary, it is a valuable auxiliary, and may often be made co-operative to the recovery of the patient. In the first place, it conduces to cleanliness,—removes, for a time, the grievous irritation of febrile heat,—and produces considerable refreshment and exhilaration; lessening that feverish anxiety, and relieving that loathing at the stomach, which are so depressing in all the stages of the disease. For these reasons we think that the practice itself, or at least a modification of it, should be adopted in most cases. At the same time we should add, that we have seen a good many instances where the affusion would have been dangerous, on account of the commotion of the nervous system; and others where the mere fatigue attending its frequent administration, for to be useful it must be frequent, would have more than counterbalanced the good to be expected. On these accounts it is generally advisable to substitute the more cautious process of sponging the body of the patient with cold or tepid water and vinegar, as he lies along at his ease. By repeating this at seasonable intervals, we shall produce all the benefit of the cold affusion, and at the same time avoid its dangers.

The administration of cold water as drink, is also a most material improvement, for which we are indebted to modern times; and in the use of it, happily, there is less need for scrupulousness than in the case of its external employment. Its free exhibition was first suggested by the Italian physicians, and Dr. Cyrillus of Naples published a paper in the *Philosophical Transactions* (No. 410. p. 142.) expressly recommending it without any other remedy whatsoever. In our own country, also, about the beginning of last century, and previous to Dr. Cyrillus's paper, Dr. Hancocke published a treatise on its efficacy, under the affected title of '*Febrifugum Magnum.*' Yet it is only within the last twenty or thirty years that cold water, or even cool drinks, have become general remedies. The lower orders do not regard them with the same aversion as cold affusion; indeed, the eagerness with which nature craves them, and the exquisite refreshment they afford, are enough to subdue prejudices even the most inveterate.

The next great and radical advancement in the treatment of fever, of which modern times can justly boast, is blood-letting. This remedy appears, from the writings of Hippocrates, to have been very freely employed in that age. Even in this country, until the middle of last century, it was generally resorted to; and had the sanction of the great Sydenham. His disciples were not silent on the merits of this practice, as is evident from some of the early medical writings of last century.* We know not well how so powerful a remedy should have fallen into disuse; but we believe it was chiefly owing to the influence of those eminent men, Fothergill, Pringle, Lind, Dr. John Hunter, Cullen, and Brown, who gave the tone to medical doctrine, and spread a fear of the lancet all over Europe, by propagating, in their prelections and writings, the false notion that typhus is a disease of direct debility. The practice, after a period of unmerited eclipse, is now happily revived, and has materially lessened the mortality of our ordinary fevers.

* Not many months ago, an enlightened friend showed us a rare little volume on the subject, with a quaint title, published in London, by a Dr. Whyte, A. D. 1712. We were surprised and gratified to observe, that the views as to the efficacy of early depletion, and the arguments used to recommend it, a century ago, are such as the present day might not blush to own.

It is gratifying to think, that this revival has not been brought about by the caprice of fashion, but by an induction from facts. For a good number of years past, blood-letting has been a favourite remedy in the fevers of warm climates: in them it was resorted to, at first, more from necessity than choice, because their violence and rapidity were found to set at defiance the remedies recommended in the schools of medicine. In fact, within the tropics, as the products of the vegetable and animal kingdoms rush through their successive stages of growth, maturity, and decay, with greater luxuriance and rapidity, so also the phenomena of fever are more marked and terrible, and run their course with greater vehemence and celerity: The consequence is, that physicians who treated fever in such countries had, comparatively, the same advantages as those who study nature with the aid of a microscope. They could see more distinctly, and estimate more justly, the secret sources of the dangerous symptoms: these being exposed before them, and magnified, as it were, it was to be expected that the remedies should become more energetic and simple; and in proportion as they became so, they have become more successful. This success abroad has contributed not a little to extend more active depletion to the treatment of our fevers at home: and the practice has been patronised by individuals of superior understanding, who had previously convinced themselves of the unsoundness of the reigning opinions on this disease, and had altered their practice accordingly.

Betwixt the publication of Dr. Hamilton's* excellent work, and the revival of blood-letting, purgatives had taken a very conspicuous part—indeed we may say the only active part—in the treatment of fever. Prejudices against this class of medicines had descended from the earliest times, and were deeply rooted in the minds both of physicians and of the vulgar. It was formerly a favourite dogma with the advocates of the humoral pathology, that a peccant matter is the cause of fever, and that purgatives would only obstruct the fermentation, concoction, &c. which they conceived indispensable to the expulsion of this offending cause. Though the doctrine is exploded,

* Dr. Hamilton on the Utility and Administration of Purgative Medicines. Edinburgh, 1803.

the prejudices to which it gave rise are still in very considerable force. It is amazing with what dread people in general look upon all sort of evacuants in this complaint. Purgatives are more particularly the objects of dislike, from their supposed effect of carrying away the nourishment and strength of the patient. Yet it would be very easy to show, that cathartics, instead of debilitating, are really, in fever, the very best tonics in the world; and form the quickest and safest restoratives to health and strength.

Fevers have been judiciously divided into three stages: the 1st is one of oppression; the 2^d of over-excitement; and the 3^d of exhaustion:—the third is undoubtedly a necessary consequence of the other two, for it is a law throughout animated nature, that excess of action is followed by fatigue or collapse. It is chiefly in the first two stages that energetic measures of depletion, by blood-letting and purgatives, can be considered admissible;—in the last, our sole aim is to support the strength of the vital powers by cordials, taking care, at the same time, not to over-stimulate. Yet, even in this advanced state, some active purgatives are indispensably required every second or third day: though at this time there must be conjoined with them a prudent use of wine and other stimuli. These means are opposite in appearance, but by no means so in principle. In fact, to carry off the offensive fluids, is now, if possible, more necessary than ever. By so doing, the patient is exhilarated and refreshed; and besides, a healthy secretion of bile and of gastric juice is prompted by it. Under such circumstances, a moderate allowance of ripe porter or ale will often have all the good effects of wine: nay, there are many patients with whom they will be found to agree much better.

When we reflect how very grateful a complete change of linen is, even in the fullest health, we can readily imagine what a delicious gratification it must be to the arid and burning skin of a person in fever. Besides, it deserves to be more generally known, that clean linen acts as a spur upon the cutaneous pores, and thus either elicits perspiration, or at least causes a salutary determination of blood to the surface. Indeed, we know of few means so absolutely indispensable as a change of linen daily, or even twice a day; combined with

thorough ventilation, and strict cleanliness of the patient's person and apartment. Without these, the best medical treatment will be nugatory: and the professional attendant, who does not make them the primary objects of his attention, degrades himself from a philanthropic physician, to a mere mixer of drugs. Yet of drugs, properly so called, how very few are really necessary in fever! In the early stages, such as are given should be of an active nature: and towards the close, in general none, save purgatives, are necessary; as recovery will be better promoted by regulating the diet, and tempering it to the diminished powers of the stomach.

As diet is so important a subject, we should perhaps be somewhat more explicit with regard to it. Nature has wisely provided, that throughout the active part of the attack, there should be an absolute loathing of solid food—a pretty convincing proof that it would be hurtful. Nothing, then, should be offered at such times except lemonade, subacid fruits, gruels, milk and water, butter-milk, whey, and the like, so long as any unnatural heat or thirst remain. In the stage of exhaustion, panadas, Indian arrow root, nourishing broths, animal jellies, Madeira mixed with milk, and a draught of brisk ale or soda-water, are highly proper. A spoonful of common yeast given at intervals, will often be serviceable at this period of the complaint. Generally on the head of diet,—it is necessary to be very circumspect, as premature indulgences always retard recovery, and often produce a serious—perhaps fatal—relapse.

It must be interesting to the general inquirer, as well as to the medical scholar, to mark how very different the treatment of fever is at the present day, from what it universally was a few years back. At that time, bark, opium, camphor, wine, brandy, and other stimulants, were used from the very first; now-a-days these have given place, at least amongst the well informed of the medical community, to a series of remedies entirely opposite. Much of this difference of practice is to be attributed to a notable revolution in medical opinion; but some share of it, perhaps, must, in candour to our predecessors, be ascribed to a change in the disease itself. The character of diseases is modified by causes often wholly unknown. That every epidemic has its own peculiar constitution, is an observation as old as

Sydenham; and this accurate physician was wont to remark, that his treatment, during any given season, was never fairly successful, until he had found out the *genius* of the reigning fever. It is probable, then, that, from some unknown cause, epidemic fevers are now more of an inflammatory nature than formerly; but, on the other hand, we think it plain, that, were our modern fevers treated by stimulants, hot regimen, and deficient ventilation, they would become sufficiently malignant; and rapidly put on those appearances of extreme debility and putrescency, which gave our forefathers such a horror at any thing like evacuation. We hold, that, in very many instances, the type of a febrile disease is completely in the hands of the attending physician; and that treatment will often alter it entirely. The mere neglect of ventilation and evacuants, will, even in simple fevers, produce an alarming prostration of the vital powers: this prostration, again, will be more readily removed by strict attention to these particulars, than by the most powerful cordials in the whole *materia medica*. Dr. Bateman has stated some interesting facts on this point; and we have seen many of a similar nature.

After this explanation, the reason must be pretty apparent why our forefathers had so generally a disease of debility to encounter: the kind of treatment they adopted at first, did indeed, render the exhibition of bark and wine requisite, as a necessary result of their total neglect of depletion. The prostration thus artificially superinduced, was gratuitously ascribed to the type of the disease. Notwithstanding all these errors, it is well known that many recovered: this shows that the stimulating plan had its share of success; though, doubtless, not a few perished for want of those modern measures which are so much more successful. That the same end should be attained by means diametrically opposite, is a paradox in medical science, that should teach physicians to mingle humility with the just pretensions of their art. In order to explain this paradox, apparently one of two suppositions must be true: During the reign of the antiquated practice, either nature was more compassionate than art, and so carried the day against the formidable odds of the disease and the doctor; or else the constitution of fevers is materially changed from what it then was; so

that a malady which can now be safely combated only by blood-letting and purgatives, could then be safely treated by tonics and stimulants. We are much inclined to solve the difficulty, by adopting, *in part*, both of these opinions,—leaning, however, very much to the former.

Upon the whole, it is gratifying to think that improved views of the pathology of fever are now gaining ground so rapidly; and that men of talent are taking a leading part in prosecuting the active treatment. Their authority must, in process of time, operate a change on that herd of *practitioners* who still pursue the beaten track of former years, and hold their camphor-juleps and ether-mixtures in perpetual requisition, immediately after they are summoned to a case of fever. For our own parts, we look upon typhus as to all *practical* intents and purposes, an inflammatory disease; and are satisfied that, in by far the majority of cases ending in death, there has been inflammation, acute, or sub-acute, of some vital organ: Nevertheless, we think it evident, that in the precession of causes to effects, it is the nervous system that first suffers; and that its derangement modifies all the subsequent phenomena, so as to give inflammation a different aspect from what it has in other diseases, purely and primitively inflammatory. Of the precise nature of this disturbance we know just as little as we do about the ultimate nature of attraction, or the intimate essence of life; its effects, however, are a suppression of the energy of intellect and of volition, tremors, general pains, lassitude, coldness, and so forth. All these indicate an unknown change in the centre of the nervous influence, the brain and spinal cord; and, as signs, they appear to be primary and essential,—commotion in the heart and arteries being only symptomatic.

We are further of opinion, that contagion, when inhaled by the lungs, and absorbed by the blood, effects a change upon the constitution of that fluid,—a change very different from its condition in ordinary inflammation;*—that, in short, its mass is poisoned, to speak popularly, by this invisible virus. In this way we can, in some measure, explain the breaking out of livid blotches, and the occurrence of hæmorrhages from the

*Blood drawn in fever, very seldom shows the inflammatory crust, or buffy coat, which it almost constantly does in pure inflammation.

bowels, and other parts of the body, in the last stage of our worst fevers. These, we conceive, proceed from a dissolution of the blood, and from the impaired vitality of the minute vessels; allowing some of it to escape in inky spots under the skin, or in a flux of semiputrescent gore from their unresisting mouths. Such appearances are seldom or never seen in diseases truly inflammatory.—We remark, with pleasure, that our opinions, on this interesting matter, are pretty nearly akin to those of Dr. Armstrong, in his late classical work on typhus.

We now proceed to discuss the measures of prevention:—which depend, of course, very much on what we know or believe as to the nature of the contagion. Now, contagion exists either in the state of an invisible matter, exhaling from the body of the patient; or else adhering to articles of clothes, furniture, or the like. In the latter state, it is known amongst medical men by the appellation of ‘fomites;’ and every thing concurs to prove, that its virulence is not impaired by this lurking condition; but, on the contrary, is maintained in a state of greater concentration and activity, than even when it first emanates from the patient’s body.

We have already remarked, that a specific poison, capable of causing a similar disease in others, is generated in the system of a person under fever. This poison, as soon as the disease is fairly begun, continues unintermittingly to exhale from every pore, until convalescence is nearly completed. Not only the surface of the skin, but also the inner surface of the lungs, mouth, intestines, and bladder, continue to pour out the contagious vapour; consequently the very secretions and excretions are highly impregnated with it. In truth, the patient is surrounded, for two or three feet, by an atmosphere of his own, very deleterious to all persons susceptible of the disease who may happen to be exposed to it. As a matter of precaution, therefore, strict non-intercourse with the sick should be enforced; and those whom duty or inclination leads to visit the patient, should be very careful not to inhale his breath, or expose themselves to that steam of perspirable matter which rises from his body when the bed-clothes are turned down for the purpose of rendering him any offices of help. While engaged in such duties, they should hold in their breath for a

time; and, if under the unavoidable necessity of inhaling the tainted atmosphere, they should, as soon afterwards as possible, blow from the nose, and wash the mouth, with a view of detaching any infectious particles that may be adhering to these passages. All the discharges of the patient should be thrown away as soon as they are rendered, and the vessel washed with boiling water. But the most important precaution of all is, to maintain a perpetual circulation of air in the patient's chamber. For this purpose, a small chink of the window should be left open both at top and bottom,—and the opposite window, where there is one, or else the door of the room, should also be a little opened. When open windows cannot be had recourse to on account of high winds, or other inclemency of the weather, a small fire must be kindled in the grate. Though not considerable enough to raise the temperature of the room above a degree or two, it will have the salutary effect of causing a current, and frequent renewal of the air in the chamber. For the better success of ventilation, the bed curtains should never be drawn close around the patient, but merely one of them let down to screen him from the irritation of the light.

It is very seldom, particularly in the abodes of the poor, that ventilation is sufficiently attended to; this arises partly from their natural carelessness, but more especially from their groundless apprehension of the patient's 'catching cold' from the admission of cool air. We call this a groundless apprehension, because, in a uniformly low temperature, patients are little liable to colds: it is only sudden alternations that give rise to them. Besides, we have observed, that when the body is under fever, it is not so susceptible, as in health, of minor diseases like catarrh. But, even were it otherwise, precautions may easily be taken against an occurrence of this kind, by interposing a screen betwixt the current of air and the patient's body, more particularly when he lies asleep, or when the atmosphere is frosty.

In small, close, and filthy chambers where contagious fever is, the air of the apartment will soon become so surcharged with contagious effluvium, that the majority of those who inhale it, will afterwards take the disease: but if free air be ad-

mitted, the virus becomes so diffused, that the air of the room may be respired without danger:—just as if we dissolve an ounce of arsenic in a bucket of water, we shall form a liquid which few could taste with impunity: but if we throw the same quantity into the Forth or the Thames, the poison becomes so dilute as to be incapable of producing the smallest inconvenience.

We must agree with Dr. Bateman in condemning the custom, so frequently adopted, of sprinkling the sick-chamber with aromatic vinegar, or other perfumes. These most assuredly have not the smallest influence in preventing infection; but, on the contrary, rather tend to vitiate the air. As they disguise offensive smells, we fear they are too often employed as a succedaneum for ventilation; and in this view they are greatly to be reprobated. The criterion of proper purity for a sick chamber is, that it communicate no perceptible smell whatever to a stranger entering it.

With regard to camphor bags, nosegays, smelling bottles, &c. in which many put their trust for safety, when they visit an infected chamber, we are satisfied they can have no good effect whatever, unless in so far as they give confidence to the mind of those who employ them, and prevent the depressing passion of fear,—a passion that predisposes wonderfully to the reception of all contagious diseases.

Another very essential precaution consists in frequently changing the body and bed-linen of the patient, and occasionally sponging his skin with tepid water and vinegar. While this, as we before remarked, is very conducive to the recovery of the sick, it contributes no less to the safety of the attendants. As soon as the linen is thrown off, it should be collected in a tub and covered over with water, into which a handful of lime or caustic potash may be thrown, for the purpose of detaching the animal matters with which it may be impregnated. In one word, then, unremitting regard to ventilation, and the strictest attention to cleanliness in all its parts, constitute the whole secret of evading contagion: and if, along with these means, the attendants and visitors will take care never to approach their heads so nigh the patient as to risk inhaling his breath, the effluvium of his body, or the va-

pour of his evacuations, they need not fear any contagious disease, however malignant may be its type.

As to the sphere of the contagious effluvium, and the distance at which it may affect persons exposed to it,—there is, we think, the most convincing and satisfactory proof, deduced from a long course of experiments and observations, that the exhalations radiate from the body of the patient only to the distance of two or three feet, provided the noxious vapour be not accumulated, and condensed, in the room, for want of ventilation. This sufficiently shows how unfounded are the fears that many express at living in a district of the town where fever is prevalent, or in the neighbourhood of fever hospitals, and infirmaries. If the precautions now recommended are at all attended to, we may live with safety even in the same house where fever exists.

When the mattresses, blankets, linen, clothes, or furniture, are imbued with contagious matter, actual contact with these substances is necessary to produce infection. Yet it is frequently surprising how slight and accidental a contact may be sufficient to produce the effect: and when we reflect how often the disease is propagated by means of infected lodging houses, bedding, clothes, goods, &c. we ought to be on our guard; and on all occasions attend rigidly to purification of suspected articles of apparel or furniture, by fumigating, boiling, scouring, and freely exposing them to the breeze.

It will not be irrelevant to say something in this place, about the degrees of predisposition to the disease in various persons. The liability to be affected by contagion differs greatly in different individuals; some being acted upon by very small doses of the poison, while others resist the strongest. Part of this difference of susceptibility must, perhaps, be attributed to an unknown condition of the nervous system; but, we believe, it chiefly depends on a state of the blood; for, as we before observed, contagion, in most instances, finds its way into the system through the medium of that fluid. Blood is said to be rich when the red part is considerable in proportion to the whole mass; and vice versâ. Those, in whom the process of sanguification is most vigorous, have a great share of red particles in their circulating fluid; their fibre is also strong and

rigid; and their complexion florid. Such persons are observed to be little liable to contagion, compared with persons of an opposite habit. Those—again—in whom the blood is impoverished, are marked by a pale exsanguious complexion, and lax fibre; arising, in all likelihood, from weakness of the sanguific powers. Such persons are observed to be very susceptible of contagion. Habit alone renders the human frame much less easily influenced by this, as well as by any other noxious cause. It is only on this principle that we can explain why physicians and nurses generally escape fevers, though it is obvious they are exposed to them in a degree, greater by a hundred-fold, than any other class of individuals. Yet to this law of habit, as to most others, there are exceptions: for whenever an epidemic is severer than usual, the ordinary attendants by no means invariably escape. On the present occasion, many medical men, and especially hospital nurses, have fallen a sacrifice to their professional duty: the mortality, also, among clergymen and others, in the daily practice of visiting the sick, has been very considerable.

Whether the epidemic is on the increase or decline, forms, at the present moment, a very interesting question. We are sorry to say, from all the evidence that appears, there is reason to apprehend that it has not yet attained its maximum of extension; for there are accounts of its having broken out in some parts of the empire which have hitherto escaped its ravages, —while no where does it show any well-marked tendency to decrease. That it would by and by decline of its own accord, even if let alone, is probable from the history of former epidemics, none of which, we believe, have lasted much beyond three years, and few quite so long: but what extent of mischief might previously be inflicted, is quite beyond the reach of calculation. It is therefore highly necessary that public measures of prevention should be adopted with all speed and vigour.

We would recommend, then, for the general welfare, what has already been so far done in Ireland, Glasgow and Edinburgh, that certain individuals in every town or county should erect themselves into an association for the suppression of fever. Their number should be proportioned to the size or

populousness of the district which their exertions are meant to protect; and, in other respects, they should be men of diligence and intelligence. It is essential to the object of the institution, that the members should consist of those who, from their rank, intellect or influence, have the confidence of the lower orders. We have no doubt that, in every town, a sufficient number of such individuals would be found, public-spirited enough to volunteer their services in this benevolent cause. In fact, it is obviously the self-interest of every one to assist, to the utmost of his power, in extinguishing a disease that, if left to itself, must involve every class of society.

This association should comprise one or more magistrates of the place to which it belongs, so that its suggestions may have more weight, and its operations be aided occasionally by compulsory civil power. Above all, it should comprehend the Clergy of all denominations; because, from their character and station, they generally have great influence over the poor. It should also comprehend a sufficient number of the faculty, for the purpose of examining the habitations of the disease, ascertaining its extent, and the means of eradication. Such an association, it is evident, should have the power of collecting voluntary subscriptions, or even of imposing assessments to provide funds for executing the object of its establishment. It would be well if government or parliamentary grants, for the latter purpose, were given to such districts as have suffered long and extensively from the epidemic.

These previous matters being duly arranged, every town or county should be parted off by parishes, or other more convenient divisions; and two inspectors, one of whom should be a medical man, appointed to each. It should be the duty of the inspectors to visit and minutely examine the state of health of every family in their division once a week, or oftener, if circumstances require it: and if any cases of fever are found, they must have them removed to a hospital as soon as possible, and afterwards take upon themselves the charge of having the infected dwellings cleaned and fumigated. The poor should be required to lodge, with the president of the association, or with the inspectors of their district, information of any new case, as soon as it appears. Dr. Haygarth, to whom

the world is indebted for many judicious directions for the extinction of contagious diseases, has proposed that persons should be incited by some small pecuniary rewards to give the information in question: but we believe that the mere solicitude of neighbours for their own safety, will be a sufficient inducement to them to make known any infected house in their quarter to the proper authority, as soon as they know that a proper authority is expressly provided for the purpose of remedying the evil.

The association should next proceed to procure tenements to be converted into temporary fever-hospitals. Barracks are, generally speaking, well adapted to the purpose; and at the present time, when so many of them must be unoccupied with troops, their temporary appropriation in this way would be productive of very great benefit. In Edinburgh, the grant of Queensbury barracks has greatly facilitated the disposal of the numerous cases. Prison-depots might also be occupied for a similar purpose: but where neither these nor barracks are to be had, a warehouse, storehouse, granary, or the like, may be made to answer the intention. Architectural requisites are of no consequence, provided the premises be but large, dry, and well ventilated. Indeed their internal fitting up cannot be too simple: we have often been struck by the injudiciousness of multiplying closets and wooden partitions, which only tend to lodge contagious matter, and obstruct the free circulation of air, in large hospitals.

The number of these receiving-houses must be multiplied according to the emergency; but if the measures are promptly pursued, and patients removed during the first days of illness, it will speedily be found that we have choked up the fountain-head of the disease, and that the necessity for multiplying hospitals is entirely obviated. If, on the other hand, we allow the mischief to get greatly ahead; or if only half measures are pursued, the consequence will be, that a treble expense will be incurred; and even then, in all probability, the object will not be accomplished.

When patients are removed to the hospital, they must be stripped, and well washed with warm water and soap; taking care to cut off their hair, and remove all their ordinary clothes.

These, after being carefully washed and dried, must be put aside in a store-room for the purpose, until the patient goes out of the hospital. During his stay in the establishment, when not confined to bed, he should be accommodated with a hospital-dress, consisting of double flannel or fleecy hosiery.

Although it be a matter of primary importance to have the sick conveyed from their own houses during the first days of fever, as it incalculably lessens the danger of diffusing the disease, still, in the ulterior stages, or even in the last stage, such removal is by no means without use. But on such occasions the inspectors must be prepared to encounter a great deal of obloquy and opposition from the relatives of the patient: for no popular prejudice is more strong than that which holds it dangerous to move a patient under such circumstances. The certainty of 'catching cold,' and many other casualties, will be prophetically announced as the result of such an unheard-of measure. We can, nevertheless, assure our readers, that such a removal, even in the last stage of fevers, may, in general, be effected with perfect safety: nay, free exposure to the air will be often salutary. The only consideration that can make the measure at all questionable is, the debility of the patient—not the risk of exposing him. That debility, for instance, may be so great as to render him unable to bear the erect posture in a sedan chair; but even then, he may be laid on a mattress, or truckle-bed, in the horizontal posture, and in this way carried to the hospital. There is most respectable authority to prove that gestation, as a remedy in fever, has been repeatedly successful in cases, where the extreme prostration of the powers of life, and signs of putrescency, had defied all other means; and would, in all probability, but for this simple, though unusual expedient, have ended in death. We would, therefore, recommend this subject to the serious attention of medical men during the present epidemic. We presume almost every military surgeon that has served in the late campaigns, must have witnessed the safety—not to say utility—of gestation in all stages of typhus fever, and must be able to confirm what we have now brought forward.

We must also allude to another popular prejudice, which tends greatly to counteract or defeat any exertions made to ex-

terminate an epidemic:—we mean the reluctance which many of the poorer classes evince at being sent to public hospitals. In some instances, perhaps, this repugnance arises from a manly feeling of independence, inciting them to decline the aid of charity; but, in by far the greater number, it springs from a very general, though most erroneous impression, that in public hospitals, medical ‘experiments are tried’ upon the patients. This charge is, of course, too absurd to deserve any serious refutation: and we are certain, from personal knowledge, that the prejudice has no foundation except in the vulgar and suspicious folly of those who entertain it—entertain it, too, against a profession which gives more gratuitous aid to the poor than any other, and which—to say nothing of it as a science—ranks at least as the noblest of the arts. Yet, however unfounded, this prejudice must be combated and argued down, as it stands materially in the way. Indeed the prejudices of the poor, no less than their diseases, will claim much attention, from the association: and here, in particular, the aid of the Clergy may be most beneficially exerted.

On the subject of these hospitals, we have only further to remark, that all visits of relations to patients, unless in cases of approaching death, should be steadily interdicted; as contagion has very often been traced to such imprudent communications. Again,—those who have recovered should not be too speedily sent home among their friends, but should be kept in a separate ward, until all danger of their infecting others is gone by. The establishment of a convalescents’ ward will have a further advantage—it will prevent relapses; for most of these troublesome, and other fatal occurrences, owe their existence either to premature indulgences in diet, premature exposure to cold, or else to the patient’s being exposed, while still feeble, to a strong contagion from a newly received patient, often injudiciously placed in the next bed to him.

Though the appointment of fever infirmaries is an object of such real consequence, the association will find they have but half accomplished their duty, if they neglect cleansing those hot-beds of contagion, the dirty and infected hovels of the poor. Too much care cannot be bestowed on this great object; because, without it, we may multiply houses of recovery to no

purpose. The inspectors, therefore, as soon as the sick are removed, should cause the house to be carefully swept; every neglected corner must be emptied, and all useless rubbish burnt or buried. Every apartment must then be fumigated with nitric or muriatic acid in a state of vapour. The next step is to wash the floor and furniture with soap and water, and to whitewash the walls with lime. After this, fires must be lighted, and the doors and windows thrown open for a few hours, so as to ensure a thorough perfusion of air. Articles of bedding, after being exposed to the acid fumes, should be hung up to the breeze. The fumigation should be performed under the direction of the medical inspector, and repeated if he deem it necessary. With regard to the acid to be employed, we have only to remark, that the muriatic, though weaker than the nitric, has a stronger chemical affinity for animal matter; and as it is at the same time more diffusible, it should in general be preferred. Besides, it is cheaply and easily obtained; the only necessary articles being sulphuric acid and some common kitchen-salt. By pouring the former upon the latter, a sufficient quantity of acid vapour will be speedily disengaged; and we may increase it at pleasure by the application of moderate heat. The oxymuriatic acid gas (chlorine of Sir H. Davy) has also a remarkable power in destroying infectious matter; and is readily obtained by pouring sulphuric acid upon a mixture of pulverized per-oxyd (*black*) of manganese, water, and common salt.

There are other objects that must engage the attention of the association, but into the details of these our limits will not permit us to enter,—such as, the suppression of mendicity; the establishment of general washing-houses for cleansing gratuitously the clothes of the poor, and other minute local regulations; placarding infected houses so as to guard strangers from entering them; directing domiciliary visits to obscure and dirty lodging-houses, and placing them and their inmates under a strict surveillance of the inspectors. The suppression of beggars is a measure of primary importance; for it is certain that this class of persons having been greatly instrumental in spreading the disease both in Ireland and in this country. Often, indeed, the breath which was ex-

pended in benedictions, and thanks to those who bestowed charity, has been found to blast with infection the persons it was meant to bless!—Dr. Stokes's treatise very judiciously points out the evils of mendicity at the present crisis.

Before concluding, we may remark that contagion often lurks for a considerable time in the system before it excites fever. The length of this latent period has been variously estimated Dr. Haygarth reckons its *maximum* as high as seventy-two days, and Dr. Bancroft extends it to five or six months. The latter appears to us quite an extravagant computation, and has not a single analogy in its favour, save the remote and feeble one of the hydrophobic poison. Nevertheless, there is little doubt that the seeds of fever often remain concealed for several days, and sometimes, though rarely, for two or three weeks, ere they manifest themselves in actual symptoms. The knowledge of such occurrences is valuable, not only as throwing light on the laws of contagion, but as guiding us to extend our means of precaution. These occurrences, also, explain how fever, in many instances, should break forth in isolated situations where no contagion can be traced; because they show that, betwixt his receiving the infection and the appearance of the disease, a person might travel from the most distant parts of the empire. In this manner we can readily imagine the fever to have been first imported into Great Britain from the sister island, and subsequently carried from one place to another; because a series of facts proves, that the epidemic first began in Ireland.

We have thus once more performed an important duty, at the risk of offending many of our polite and fastidious readers:—and endeavoured to make our popularity subservient to the great cause of humanity, in spite of our consciousness that we are exposing it to hazard by the experiment. At the expense, we fear, of some disgust, and certainly of much tediousness, we have now put into the hands of many the means of doing a great deal of substantial good, and of mitigating and abridging a scene of most pitiable suffering. We trust, too, that we have also put it into the heads and the hearts of no few, to avail themselves, in practice and effect, of what has thus been suggested: and, with this view, we have purposely abstained

from all ingenious theories and questionable speculations, and confined ourselves to such safe, simple, and radical directions, as all benevolent individuals of ordinary understanding can at once perfectly comprehend, and correctly apply. The good that may be done, or the misery at least that may be prevented, at such a season as this, by their resolute exertions, we verily believe to be incalculable:—and are persuaded, not only that the present scene of affliction may thus be speedily made to pass away, but that the habits and precautions to which the great body of the poor, and their immediate advisers, may thus be successfully trained, will prevent the recurrence of the same evils, on any future occasion, to nearly the same extent.

Practical Observations on the Causes and Cure of Insanity.

By WILLIAM SAUNDERS HALLARAN, M. D. Physician to the Lunatic Asylum of Cork, &c. 1 vol. 8vo. pp. 213. Cork, 1818. (Second Edition enlarged).

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OVER the link which binds mind to matter, a cloud—an almost impenetrable veil is spread. This cannot be denied, even by those heartless philosophers who look on mind, or, what is termed *soul*, to be merely a *function* of organized matter; which, like that of sight or hearing, ceases to exist, when the organ itself is no longer capable of its office. Certainly the wreck of reason presents a most distressing picture of human nature! The loss of this most invaluable prerogative sinks proud man as far below the level of other animals, in respect to helplessness, as its possession raises him over them, in respect to power and intellectual cultivation. We are among those who believe that insanity is a *corporeal* disease, while at the same time we abjure materialism. We believe that neither this nor any other morbid affliction was ever designed for us by NATURE; but that it, and all other diseases, result from a disobedience of, and aberration from her laws. They are punishments which we, in general, bring on ourselves, or are accidentally inflicted by others—but not, we trust, the dispensations of PROVIDENCE.

The brain, as the material organ through which the soul manifests its existence, may be deranged by a variety of causes, and in a variety of ways, so as to impede, or even totally prevent this intellectual manifestation, without any necessity for the annihilation of mind itself. In sleep, the soul shows itself not; yet it has not deserted its material fabric. In fevers, the *cerebral* functions are deranged, for a time, not the *mental* functions. When the fever is over, and the brain has regained its pristine state, the mental faculties are manifested as before.

On this point, then, we totally disagree with Dr. Hallaran, who argues for *disease* of the mind, while he denies the possibility of its *death*. He considers the *manifestations* as the *essence* of mind for the time being; and hence, says he,

“If the manifestations of the mind be diseased, from any given cause, they naturally must betray an unsound mind, in the ordinary acceptance.” p. 19.

To this we can by no means subscribe; but we shall not stop to argue on a point which, after all, can only be conjectural.

We agree with our author, however, that the *causes* of insanity may be practically and usefully divided into mental and corporeal, while “the malady, though differing in its origin, is, in effect the same.” The method of treatment, too, we know, must be modified by an attention to this important difference of cause—since *functional* disorder of the brain may often be removed by mere *moral* means, while *organic* derangements must have more *material* remedies.

I. *General and local Causes of Insanity.* Among these, our author justly places WAR, domestic and foreign. The unhappy political feuds and animosities which have so long distracted the sister isle, and, at one time, ripened into open rebellion, engendered, among other evils, a host of visionary views and consequent disappointments, followed by the pangs of suppressed licentiousness and arrogance. Others again, who, though “guiltless of their country’s blood,” beheld their property wasted, their friends destroyed, and the strongest ties of consanguinity broken, have sunk into hopeless apathy—a prey to wretchedness and despair. To these causes may be, in a great measure

ascribed, the augmentation of the insane lists within the last seventeen years in the asylums of Ireland.

From this dreadful scourge, the higher classes were not exempt. In some, it was the result of terror—ending in melancholia. In others, disappointed ambition was followed by gay, loquacious, and fanciful hallucinations. Both forms were equally incurable.

The abuse in spirituous liquors is another cause of insanity in Ireland, of wide operation, the first and second attacks from which are generally within the reach of medical aid; but if the attacks are repeated, fatuity, epilepsy, or death is the termination.

Religious dread is a well known operative cause of insanity; and it was, ten to one, more prevalent among Protestants than Catholics.

Respecting the *hereditary* nature of insanity, we need not now raise a cloud of verbiage to puzzle common sense. Peculiarity of organization is transmitted from parent to progeny, and so is the disease dependent thereon. This is the plain meaning of the *mysticism* of susceptibility and predisposition, so long cherished by the disciples of John Hunter.

II. *Treatment.* Although it cannot be expected that *Mania Furibunda* will, in the first instance, admit of a similar mode of cure to that which is the result of the depressing passions, producing melancholia, yet the ultimate treatment of each form of insanity will not be found to differ very widely. The furious maniac is liable to be soothed, and finally benefited by moral means; while the melancholic patient often becomes violent and unmanageable, so as to require the intervention of evacuant medicines. So near, indeed, do the opposite forms of insanity approach each other, that the one is frequently observed to *terminate* with symptoms which are peculiar to the other at the *commencement*; and vice versa. Still the impression of the original exciting cause supports pretty uniformly its genuine character throughout, and will not long bear a deviation from its appropriate specific treatment.

The first impression which the physician makes on the insane patient is of great importance, as it is generally either favourable or unfavourable. The attempt to argue him out of

his hallucinated idea is worse than useless. The less notice, indeed, that is taken, even of his most obstinate phantasies, the less disposed will he be to retain them. On the contrary, it is better to coincide with his wildest extravagancies, unless where the delirium of fever may render strict silence necessary; or where the insane is disposed to commit an injury on himself or others.

In respect to the pathology of insanity, our author is rather undecided; but he observes that—"in *all* instances, whether of the sanguineous or sanguineo-melancholic, he has long entertained the opinion that, in whatever degree the arterial action is exerted, there follows at the same time a torpor of the venous system, effecting a diminution of the equilibrium in the circulation, so essential to the preservation of health."

The observations of Dr. Armstrong, in this country, tend something to the same point. This last physician, whose accuracy of observation is well known, has seen several cases where mania was ushered in by the strongest signs of cerebral *congestion*, while the tone of the heart was extremely oppressed, the face very pale, the pupils dilated, the hepatic secretions disordered, and the skin cool and relaxed. In other instances, again, Dr. Armstrong has observed mania to commence with what is termed excessive determination of blood in the *arteries*, with swollen reddish face, ferretty eyes, full, bounding pulse, and preternatural heat of the surface, but especially of the forehead and hairy scalp. In the congestive variety the patients often complain, a little before the attack, of a load or confusion in the head, with an oppression about the heart, or at the epigastrium; while in the excitive variety, patients often complain of a pulsating pain or fulness in the head, the action of the heart being increased both in force and frequency. The congestive variety often passes into the excitive, as we see in many fevers.

From the pathological opinions of Dr. Hallaran, he has hitherto refrained from venesection, as much as possible—principally, however, from the circumstance of patients being received into public asylums in very advanced stages of the disease. In private practice, where, in some instances, he met with maniacal cases in the primary stages, he opened the temporal artery, which, by diminishing the excessive impetus

of the heart, induced quiescence, and gave immediate relief. *Post mortem* researches did not appear to our author to afford satisfactory proofs of previously existing inflammation of the brain; on the contrary, he asserts, that the brains of those who had died under the direct influence of the insane orgasm, most generally exhibited decided evidence of relaxation, with a peculiar soft, white, flabby aspect of the entire substance, resembling more the appearance of curds than that solid, compact mass, which we observe to be the common consequences of inflammation. The ordinary course of protraction which insanity is observed to run, militates, Dr. H. thinks, against the idea of inflammation of the brain as a cause of insanity. And he adduces a curious instance of a young woman in the asylum over which he presides, where the paroxysms are furious to excess; her countenance exhibiting invariably a most terrific glare, and her uproar being hideous. The pulse, during the paroxysms, continue at about 96, full and hard; the skin hot and red throughout; muscular motion incessant and uncontrollable. To take blood, under these circumstances, is altogether impossible. During the intervals, she appears as completely free from uneasiness, both of body and mind, as the most healthy person. In this case, our author asks, how it comes to pass, that if any thing like inflammation be present in the paroxysms, it should leave no trace behind it in the intervals? We answer, that inflammation and temporary local turgescence are very different things. A man may have apoplexy, the abolition complete of sense, from local engorgement of the cerebral vessels, but without inflammation. We are not, therefore, advocates for the use of *general* bleeding in these cases, unless the general excitement run particularly high; and this leads us to

1. *Local Bleeding*. In a great variety of cases of insanity, especially in young subjects, the sense of heat throughout the scalp; the tinnitus aurium; the idea of loud voices heard from afar; and the coldness of the feet, evince the determination of blood to the head—or rather, congestion in the venous system of that organ. Apoplexy not unfrequently grows out of such appalling circumstances. Here there is no inflammation, yet the application of leeches is of the first consequence. They

should be repeated as long as the superficial heat shall continue. Cupping glasses may be applied over the bites, in order to abstract a sufficient quantity of blood—all this may be done without making any sensible impression on the general circulation, yet with great advantage to the local congestion.

2. *Emetics.* Dr. H. has found that insane patients resist the operation of emetics, requiring triple the dose for people in health. He cautions against the full action of vomiting, "when the danger of over-distention is to be apprehended" in the cerebral vessels. We have long considered this dread of distention in the head, during the operation of emetics, as truly chimerical. We know that there is not a more powerful mean of relieving local internal congestion, whether of the head, lungs, or abdominal viscera, than nausea and vomiting. This last drives the volume of blood to the surface with such force and rapidity, that all turgescences of the interior are instantly resolved. In saying this, we are not advocating the practice of emetics in mania, but stating a fact which may be applicable on many other occasions, and which is not sufficiently known or believed. Dr. H. recommends combinations of purgatives and emetic tartar, so as to excite nausea, and at the same time act on the intestinal canal. It is needless to say that these remedies are more peculiarly applicable to acute insanity. Where, from turbulency, blood cannot be taken, antimony in proper doses, at moderate intervals, seldom fails to reduce the most stubborn maniac to a state of relative quiescence; and sleep very frequently follows, with those happy consequences which succeed to a relaxation from inexpressible misery.

3. *Purgatives.* These are almost always of primary importance during the progress of an insane paroxysm. At the conclusion of fever, and even at the more advanced period of convalescence from mania, purging is invariably indispensable. The biliary secretion is very generally deranged in this disease; and therefore, a combination of calomel, jalap, and antimonial powder, in such proportions as shall secure them a direct passage through the bowels, will be very proper. After purgatives, a degree of reaction occasionally succeeds, marked by obstinate constipation, acute pains darting through the head, and complete sleeplessness. Under these circumstances, anti-

monials, singly or combined with neutral salts, are eminently serviceable. The indication for a continued use of the purgative plan will be drawn from the appearance of the stools. So long as they shall consist of dark matters, accompanied with scybala, and but slightly tinged with bile, the purgatives are to be continued.

4. *The circulating swing* was first proposed by Dr. Darwin, and brought into practice by Dr. Cox. Dr. Hallaran has found it very serviceable in those who were recently attacked, and after they had been sufficiently evacuated by purgative medicines. It was also useful in those inflexible maniacs, on whom no influence could be exerted in the administration of their medicines. Where the object is to produce free evacuations, the swing seldom fails, on increasing its velocity to the degree required, gradually rather than by giving it rapidity at the beginning. In this way the stomach, bowels, and urinary passages, may be acted on in quick succession, particularly by reversing the motion of the swing every six or eight minutes, pausing occasionally, and stopping its circulation as suddenly as possible. The discharges which succeed are often surprising, both by their extraordinary magnitude and fœtor.

The circular swing, however, is not to be used indiscriminately, and not till after other remedies are employed. In what is termed intermitting insanity, Dr. H. has found the swing peculiarly applicable, except where there is much determination to the head.

5. *Digitalis*, according to our author, is not eligible in any case, unless where the system is previously reduced by proper evacuants; and, in fact, its sedative properties can not be usefully exerted, under the pressure of high arterial action. Dr. Hallaran, indeed, comes to similar conclusions with Dr. Sanders of Edinburg, on the subject of digitalis; namely, that its *first* operation is stimulant.

“Its stimulant principle is unquestionably previously exerted; and by this principle does it seem chiefly to impart its benefits. The *sedative* quality of digitalis is secondary; it cannot therefore, with safety, be administered beyond a certain extent, any more than opium—to which, in its ultimate effects, it is greatly similar.”

Dr. H. on this principle, prescribes digitalis with the greatest confidence of success.

“Digitalis has shewn its capability of restraining within due bounds, the action of the heart and arteries—so has it, in a remarkable manner, evinced its anodyne and soporific qualities.”

Its exhibition must be watched. On the first appearance of pallor, nausea, vertigo, dilated pupils, slow intermitting pulse, with cold extremities, the digitalis should be laid aside, and the volatile alkali, and other cordials administered. It is principally, however, in those cases where carried to a large amount, that the remedy manifests the most decided and the most permanent proofs of superiority.

6. *Opium* appears to be a very doubtful, or rather dangerous remedy in Mania, where there is any degree of arterial excitement; and of late years, it has been seldom used in the Cork Lunatic Asylum, having been superseded by the swing and digitalis. It may still, however, be a question, whether, in the generality of instances, a full and timely dose of opium, by interrupting the quick succession of morbid sensations, might not, in the event of its operation, so fully tend to dissever the catenation as to make way for the gradual return of rational perceptions: but it is a remedy which cannot be persisted in longer than the first effort; especially where the occasional causes are such as induce an over distention of the cerebral vessels, and a febrile diathesis.

7. *Camphor* has been loudly extolled in Mania; but our author has found it uncertain and inefficient.

8. *Blisters* have been too indiscriminately applied, especially to the head. In the more advanced stage of insanity, or rather towards the decline of the paroxysm, where a want of energy, and an incapacity to participate in the usual objects of volition succeed to the previous temper of activity, the occasional repetition of a blister round the lower part of the neck is often found beneficial. Their efficacy may, in certain cases, be more complete, by placing them low down, as on the calves of the legs.

9. *Mercury* is not generally applicable to the cure of insanity, except where the causes have been retrocedent gout; or hepatic derangement.

“ Although I cannot (says Dr. H.) decide favourably on the specific properties of mercury in this disease, I am far from limiting them to its purgative quality;—the equable and general stimulus which it affords to the system at large, by an evident action on the absorbents, has taught me to entertain a high opinion of its utility as a preparative for the digitalis.”

10 Calomel, as answering a two-fold purpose, of freeing the bowels and acting on the general system, is, of all other preparations, the best. The combination of calomel and tartarized antimony, in the early stages of the complaint, where the influence of antimonials was desired, invariably promoted the evacuant qualities of the latter—in other cases, it may be combined with antimonial powder.

We may here state the sentiments of Dr. Armstrong on this point; sentiments which accord pretty uniformly with the results of our own experience. In the first two weeks of attack, Dr. A. generally bled both from the arm and temporal artery, until the cerebral turgescence was relieved, and the action of the heart restored to a more natural state, evacuating the bowels, at the same time, by calomel, jalap, and salts—the calomel being given in full doses, so as to procure both its constitutional and purgative operation. After that period, he drew blood by leeches or cupping about twice a week, ordering a saline purgative every second morning; and giving calomel daily, in such doses as to insure a moderate but constant ptyalism for some time: two thirds of the *recent cases* of madness recovered within the first three or four months, under this treatment; though hardly any of the patients shewed signs of convalescence until the mouth had been affected for some weeks by the mercury, and until some degree of emaciation took place. When, as is generally the case, we find a difficulty in impregnating the system with mercury, this is an indication that evacuations are required, which always tend to render the system pervious to the influence of mercury. When ptyalism is once induced in mania, it is easily kept up by moderate doses of calomel or blue pill, or by mild mercurial frictions. After sufficient evacuations, he has often combined small doses of opium with the alteratives; and whenever there

was much nervous irritation, this combination always appeared more or less beneficial. *On typhus, p. 304, Second Edit.*

11. *Warm and Cold Bath.* In the early stage of mania, and where the necessity for active evacuations still continues, no greater degree of heat than the temperature of the body, at the time being, can be unproductive of mischief.—In fact, the warm bath, at any temperature, is altogether unsafe in the first stage of mania; neither does it seem very admissible in the second or improving stage; in short, where stimuli are improper, the warm bath is inadmissible.

In the third, or convalescent stage of mania, the warm bath, in Dr. Hallaran's opinion, is highly beneficial. The secretory organs are thereby excited into healthful action; especially the liver, as evinced by a critical flow of yellow bile from the intestines; a general forerunner of complete recovery.

We should begin with a temperature of 96°, at the highest; and the continuance in it must be regulated by the immediate state and strength of the patient. To obviate *deliquium animi*, napkins wrung out of cold vinegar and water, and applied entirely round the head, in the form of a turban, and frequently renewed while in the bath, will be serviceable. This is something of the same plan as that of Messrs. Delahoyd and Lucette, which made so much noise a few years ago. Moderate exercise in a dry, open atmosphere, immediately after coming out of the bath, ought, in general, to be enjoined.

12. *Shower Bath.* Here Dr. Hallaran conceives, that the rules laid down by the late Dr. Currie, in respect to cold affusion in fever, will generally apply in mania. We must remember, however, as is well observed by a late excellent writer, that much harm may be done by persevering in the cold shower bath, after the tone of the heart and arteries has been subdued; for it then may increase or occasion fulness in the vessels of the brain, confirm the insanity, or induce an attack of apoplexy, palsy, or epilepsy. Where there are determinations to the head, we have found more permanent advantage from wetted cloths to the scalp, as beforementioned, keeping the head high, in order to retard the tide of arterial blood to the head, and accelerate its return by the veins; a circumstance of

great importance in all severe affections of the cerebrum. In those cases, as Dr. Armstrong observes, which are strictly congestive, the cold affusions cannot be safely employed; but the *warm* shower or slipper bath may be beneficial, in combination with the depletory practice. Where the mercurial course, with the means before enumerated, had failed to remove all the symptoms of insanity, Dr. A. has generally persevered in the use of the warm or cold shower bath, with tolerably active purgatives; and has not often been disappointed, where the disease was not of long standing.

13. *Seclusion from Light.* The stimulus of light on the optic nerves, and through them on the brain, is exceedingly instant in its effects, and injurious in its consequences, in insanity, especially of the acute kind. Maniacs, however, do not commonly complain of the effects of light on their senses; on the contrary, they rather court it. The regulation of light then, in the apartments of the insane, is of the utmost consequence. Total darkness, indeed, is not to be preferred. A moderate and equable degree of light is at all times necessary, so that surrounding objects may be distinctly viewed, without the danger of deception by optical deformities. The light should be received into the room of an insane patient indirectly, or from a northern aspect; it ought also to be admitted from the highest elevation which the room will afford, so as to avoid all intercourse from without, and prevent irritation, even from inanimate objects. Persons far advanced in convalescence have often been thrown suddenly back, from their inability to bear the impulses of light, or the impressions and associations resulting from officious intrusions. It is, therefore, of great importance "that no objects be left in the way of observation, which may revive former associations, either of a *grateful or offensive nature.*" In convalescence from this disease, rural scenery has always been found to have a more tranquillizing effect than the scenes of busy life, whence a quick succession of ideas is forced upon the imagination, and that with serious mischief.

14. *Exercise* forms a material department of regimen in the convalescent state. The extreme degree of muscular debility which invariably succeeds a maniacal paroxysm, often degene-

rates into such a rigidity of fibre, as tends even to a curvature of the spine, and inability to extend the lower extremities. In pursuing this measure, the exercise and business of horticulture seems to merit the most decided preference. Sedentary employments, of all descriptions, are ill calculated to the dignity of the imaginary STATESMAN OR THE MIGHTY POTENTATE! and equally so to the convalescent maniac, whose chief happiness consists in the free exercise of his faculties in the open air.

15. *Diet.* This must, in some measure, be regulated by the previous habits of the patient; but, upon the whole, the farinacea are preferable to the animal dishes. In the Lunatic Asylum at Cork, there are certain seasons of the year, when allowances of animal food is made to the insane patients. The consequences, however, on these occasions, are uniformly the same—a scene of uproar. Animal food therefore tends, generally speaking, to the aggravation of insanity; especially where there is a prevalence of those acute appearances which denote the insane orgasm. In the more advanced period of convalescence, and under the symptoms of debility, owing either to age, or to the protraction of a paroxysm, a gradual indulgence in animal food may be allowed. Wine and fermented liquors are, of course, equally injurious, unless in the most urgent cases. The insatiable cravings for food or drink, which maniacs frequently discover, are never to be considered as demanding the same indulgence as the natural inclination which denotes the tendency to real amendment.

Chronic Insanity.

This is what succeeds the acute form where recovery does not take place. This form composes the great majority of cases confided to the care of the private practitioner. Its treatment bears, in the generality of instances, a strong reference to that pursued in the primary state—varying very little more than in degree, and requiring to be regulated in strict conformity with the force and continuance of the paroxysms.

We are disposed to agree with Dr. Armstrong in dividing this form into two varieties—the one arising from a strictly *congestive* state of the brain, the other connected with arterial excitement. The congestive form is preceded by paleness of

the face and skin; watchfulness and restlessness; uneasiness in the head; occasional load at the heart; and derangement of the hepatic function. The pulse is almost always weak or oppressed during the day, the surface being damp with cold perspiration. A slight febricula and imperfect reaction take place towards evening. The other form connected with arterial excitement is generally preceded by disturbed sleep; head-ache; quickness and firmness in the pulse; white tongue, and increase of heat at nights. In this, as in the other form of chronic mania the liver is very apt to be diseased, either primarily or secondarily.

Where chronic insanity has decidedly assumed the periodical type—the recovery may be greatly promoted by the cautious introduction of the *liq. arseniatis potassæ*.

Seclusion and Separation from Friends. Universal experience has decided on the propriety of early removal and non-intercourse of the insane with their intimate friends and relatives. Yet it is to be lamented, however amiable the failing, that when this afflictive misfortune comes home to our own doors, our sentiments and opinions are re-modified, and reason is blinded by sympathy! The tenderest emotions of friendship and affection become strongly engaged. Doubts arise, and objections are urged by those whose bounden duty it is to weigh well the nature of the sacrifice to which they are called upon to submit. They ought to bear in mind, that the assiduities and attention of relatives are never received by the insane as proofs of friendship or kindness; and, that their ultimate effect is rather to irritate than soothe. With the insane, the dearest objects of affection become exposed to the most invincible hatred. If that degree of restraint and privation, which is necessary for the welfare of the insane, be imposed while intercourse with relations exists, then will a constant source of irritation be generated, since the patient will be thoroughly convinced that this coercion and this privation is with the consent at least, if not by the express desire of the said relatives. Hence they are incensed at such cruel conduct, and have often been known to retain a lasting hatred against their nearest kindred, even when they had recovered from the hallucination; for it must not be supposed that the insane are ever unmindful of what passes around them.

The interference of domestics, in the periods of violence, is sure to create an additional source of irritation. Any assumption of authority on their part, conveys the idea of an inverted order of things, to which a feeling of resentment never fails to succeed. Servants too, when incautiously confided in, will frequently, from selfish policy, defeat the views of the physician, by yielding to all the dangerous propensities of the patient, or by insidiously condemning the means adopted for his relief. Their inexperience and irresolution, even with the best intentions, set order at defiance, and the apartment of the sick, through want of method, becomes repeatedly the scene of tumult and confusion. In short, half measures, in the treatment of the insane, with the appearance of decision, are even worse than total inactivity: consistency throughout is indispensable. Seclusion from friends, from home, and from domestics is absolutely necessary.

Dr. Hallaran's work, though somewhat too *popular* in its construction, is certainly respectable; and indicates a mind fraught with practical knowledge, and strongly imbued with the feelings and the principles of humanity.

ORIGINAL PAPERS.

 FOR THE ECLECTIC REPERTORY.
On the Cure of Chronic Rheumatism.

BY JOHN C. OTTO, M. D.

Philadelphia, March 1st, 1819.

MY DEAR SIR,

I MUST inform you, in reply to your note, that I have been much more frequently disappointed, this season, in curing chronic rheumatism in the Pennsylvania Hospital, by the mercurial treatment of that disease, than has ever happened to me before, since I adopted this practice. This failure, I am enabled from great experience, to ascribe to my method not being carried to the same extent in activity and duration, as has been my custom heretofore. This change has arisen, in part, from the cases, generally speaking, being rather less painful and of shorter duration than in former years; but more especially, from a wish to ascertain, whether this disagreeable remedy might not prove effectual, without the patient suffering so much or so long, as my former practice required. The result of the trial this season, has completely convinced me, that if chronic rheumatism has existed several months, mercury will generally fail to cure it, unless a salivation to a considerable extent is continued three or four weeks. When of shorter duration, the disease will often return upon the cessation of the mercurial action. The practice of the Hospital last winter, is no fair evidence of the virtues of the remedy, and my tour of duty is at a season the most unfavourable to the removal of this disease. The result of my experience is, that every form of chronic rheumatism, in almost every instance is removed, during the ptyalism, if it is carried to a considerable extent; that the exceptions are very few indeed, where there is not permanent relief obtained; and that in a vast majority of cases a complete cure is effected, if the salivation has

been continued actively three or four weeks. Nor have I ever had reason to regret, in a single instance, its having been employed. This disease is very apt to recur on an exposure to the usual exciting causes; hence persons, who have had a very severe and tedious attack of it, should be careful for several years, to avoid being exposed to cold, damp, or tempestuous weather. Some gentlemen, to whom I have related my experience, have supposed as my patients have generally been sailors, that the cases have been venereal. This opinion however, is without foundation. Seamen, from their proverbial carelessness, the necessary exposure incident to their profession, their want of sufficient warm cloathing, their passing rapidly from a warm to a cold climate, and the variable nature of ours, are more liable to rheumatism than any other class of the community: from these combined causes, and from their being often long indisposed, before they reach the shore, they often have it in the most aggravated form. Cures of similar cases, by the same remedy, are made in persons who have never had the venereal disease. There is this remarkable difference in the progress of recovery from pains in these two affections, and it is sufficient to designate their nature; in the venereal, the pains recede in proportion to the continuance of the salivation, in rheumatism, they almost suddenly cease as soon as the mercury has complete possession of the system. It must be observed, that in the medical department of the Pennsylvania Hospital, we often have the worst cases of the latter disease; the patients with it being generally those who are the most liable to have it in its most aggravated state, or those who come to the institution as a last resort, having failed to procure relief elsewhere. Persons who have been crippled a year or two, and been entirely disabled from work, have been often restored by this remedy to their former usefulness. It is, however, not infallible. I have fairly tried guaiacum in powder, and the volatile tincture, Dover's powder, decoction of the woods, sulphur, oil of turpentine, blisters, tincture of poke berries and other remedies, sometimes singly, and at others variously combined, and found each of them occasionally to cure; but I think mercury, when carried to the proper extent, more efficacious than all

these medicines together, in very violent and protracted cases of chronic rheumatism. My much esteemed friend and colleague Dr. Park, concurs with me in this opinion. Although I generally rely solely on it, in Hospital practice, yet when it is thought prudent not to salivate much, from the particular state of the constitution, I prescribe in addition, the compound decoction of Sarsaparilla, and blisters to the parts affected. When I employ the other remedies above mentioned, for I do not use mercury in the mild cases, I am much in the practice of assisting their operation by the application of an epispastic to the pained part; and so beneficial does it prove, that it often happens as I pass through the wards of the Hospital, if blisters have not been directed, that some rheumatic patient requests to have one applied. My general mode of producing salivation in chronic rheumatism, is to give a grain and an half of calomel with half a grain of opium, made into a pill, morning and night; most commonly, in about a week the mouth begins to be affected, and the medicine is still continued, until I think a sufficient effect will be produced. If the ptyalism is disposed to lessen too rapidly, I again recur to the mercury; when it has been omitted prematurely, there is sometimes more difficulty in reproducing a salivation than there was in causing it in the first instance. We must be careful not to carry it to excess. In a few cases, it has gradually ceased, although my patients have assured me they have continued to take the same quantity that made their mouths sore. Where the stomach and bowels are irritable, I have substituted the blue pill, or used the mercurial ointment. Whenever the weather is cold, it is indispensably necessary that the sick be completely enveloped in flannel, and remain in a warm room.

Very respectfully yours,

JOHN C. OTTO.

MR. J. D. SPRAGINS.

Cases of Blighted Fetuses discharged from the Uterus at various ages, living children still remaining to the full period of Utero-Gestation.

BY JAMES MEASE M. D.

MRS. H. miscarried at the fourth month. Two months after, her abdomen and feet began to swell. An experienced accoucheur pronounced the swelling to be dropsical, and she took medicines for that supposed affection. The epidemic fever of 1797, in Philadelphia, drove her and the family from the city, to Dr. Wm. Gardner's neighbourhood, and he was engaged to attend her. In due time, that is, nine months from her first reckoning, she was delivered of a child; and in attempting to deliver the placenta, he found it obstructed at the os externum. On examining into the cause, he found a second funis adhering to the placenta, and attached to the fundus uteri. He was obliged to destroy the communication, and he then brought all away.

The foregoing facts were related to me by Dr. Gardner of Darby, and noted at the time. They were brought to my recollection, by lately reading in the ninth volume of the London Medico-Chirurgical Transactions, p. 195, a case, related by Mr. John Chapman of Windsor, of the expulsion of a blighted fœtus and placenta at seven months; a living child still remaining to the full period. The particulars of this case it may be satisfactory to state. On the 9th of October 1813, after a considerable flooding, a perfectly healthy placenta was discharged, the size they usually are between five and six months; to which were attached the membranes also quite perfect, but of a dirty yellow colour, flattened, and closely embracing a small fœtus not larger than they are generally seen between three and four months, without any liquor amnii, although it did not appear that any could have escaped. The pains ceased, and the woman continued progressively to recover strength until the 10th of December following, when she was delivered of a very fine full grown girl, with the placenta, and "had a very good getting up."

Mr. Chapman remarks the singularity of this case, that the "os uteri should have been dilated to the size it must have been, accompanied with the necessary expulsive pains to force this placenta and fœtus through it, and yet the pains again subside without going on to empty the uterus; and not only going off entirely, but that gestation should continue to go on equally well, as if the uterus had not suffered any disturbance."

Upon turning to a case somewhat analogous to that related by Mr. Chapman, and referred to by him,* I find that "a blighted embryo between the third and fourth month of pregnancy, came away two days after a living child," and the writer, Dr. John Clarke, says, that he "has in his collection a blighted fœtus, where the circumstances of the two children were the same, but this had advanced as far as the fifth month, and admitted of being preserved in spirits. The first did not, being very offensive, and the flesh almost reduced to a pulp." He further remarks, "cases of this nature have often given occasion to the opinion of the possibility of superfœtation, from two fœtuses of very different sizes having been expelled from the uterus at the same time. In such cases, however, the smaller is never found to be living. Hence it amounts almost to demonstration, that the two were formed at one impregnation; but from some disease of one of them, or from some derangement of its placenta, it had died at an early period of pregnancy, and had remained in the uterus during the period of utero-gestation, until the other living child was expelled."

In the Transactions of the Royal Society of London, for 1818, Dr. Granville refers to a case related in "one of the volumes of the College of Physicians, London, entitled "a case of superfœtation," which merely goes to prove the occasional co-existence of separate ova in utero. A lady was delivered of a male child in November, 1807, and again in February, 1808, that is three months afterwards, of another male infant completely formed. The former died without any apparent cause, when nine days old; the other lived longer." Dr. Granville properly asks the question, "can we consider this otherwise than as a common case of twins, in which one of the

* London Medical and Physical Journal, Vol. XVI. p. 53.

fœtuses came into the world at the sixth, and the other at the ninth month of pregnancy, owing to the ova being quite distinct and separate? Had this not been the case, the circumstances which brought on the premature contraction of the womb, so as to expel part of its contents in November, as in the simplest cases of premature labour, would have caused the expulsion of the whole, or in other words of both ova in that month, and we should not have heard of the second accouchement in the following February; which led the author of the paper in question, to bring the case forward as one of superfœtation. Had it been proved that the child of which the lady was delivered, had reached its full term of utero-gestation in November, and that she had brought forth another child one, two, or three months afterwards of equally full growth; then a case something like superfœtation would have really occurred."

Dr. Granville adds, "I have now under my eyes a recent preparation, where the complete ovum is seen, such as it was when expelled at the seventh month of pregnancy, the lady being safely delivered of another child alive, two months afterwards. Although the first fœtus was expelled at the seventh month, it was evidently of a growth of a shorter period, and had remained in the uterus dead for three months."

As it is extremely satisfactory to physicians, to be acquainted with the fact of the previous occurrence of cases similar to those they meet with in practice, and as others, of the same nature with those related above, will doubtless again occur, I am induced to send you this communication for the *Repertory*.

I am very respectfully yours,

JAMES MEASE.

DR. T. C. JAMES.

September, 1819.

Account of the Inflammatory Bilious or Yellow Fever at Angostura, and in the River of Oronoco, with the particulars of the Illness and Death of Commodore Oliver H. Perry.

BY MORDECAI MORGAN, M. D.

*United States' Schooner Nonsuch; Port of Spain,
Island of Trinidad, August 25th, 1819.*

Lieutenant Commandant Claxton.

SIR,

IT has become my painful duty to give you an account of the disease which prevailed so severely on board this schooner, while at Angostura, and in the river Oronoco; and a detail of the symptoms and treatment of the fever, which unfortunately terminated in the last illness of our late distinguished countryman, Commodore O. H. Perry.

On Thursday, the fifteenth of July, 1819, we discovered the mouth of the river, took a pilot on board, and proceeding, we arrived at Angostura on the twenty-seventh, all well.

Not a case of acute disease occurred while we were ascending the river, although the heat of the weather was very great, the showers frequent, and the range of the thermometer from 78 to 90 degrees. The town of Angostura is on a high situation, on the banks of the river, about 280 miles from the ocean. At the town the course of the river is nearly from west to east, which appears to be its general course. The trade winds blow over the province of Guyana; and after a very hot day, cool breezes usually spring up towards evening. I found the thermometer from 80 to 96 degrees. Upon anchoring at the town, the police of the vessel was so regulated as to expose the men as little as possible to the sun: fresh and salt provisions were given them alternately, so as to avoid the evil effects which might result from a sudden change; and vegetables as far as they could be procured. The season at which we arrived was the most unfavourable, it being, as in the West Indies, the most sickly; and a European, or North American cannot remain there long, whatever precautions he may adopt, without great hazard of an attack of inflammatory bilious fever. The fever was common, not only among the European emigrants at Angostura, but many of the natives also were taken with it.

As it prevailed among the English people, it was usually fatal on the fourth or fifth day. Black vomit appeared in many of the cases. On the first of August, a case of fever appeared on board of a very unusual character: and the violence of the symptoms too plainly indicated the danger of the issue. The man was seized with severe pain in his head, immediately above his eyes, and in his back. The heat of his skin was very great, and especially that of the head; his eyes became red, his tongue was smooth and moist, and covered with a light yellowish furr. His pulse was frequent, full, and strong; and his restlessness became so great that he would lie but a few minutes in the same posture. His pain was so severe, that he uttered continued and loud complaints. In this condition it was evident that no time was to be lost; and that the life of the man must depend on the promptitude with which proper remedies could be employed. From having seen several of the sick Europeans on shore, I had thought that blood-letting was indicated as very applicable to their condition; but, as it was a remedy little employed in the country by any body, I was resolved to adopt it with due caution. Accordingly, I commenced with evacuating the stomach and bowels with one ounce of sulphate of soda, and one grain of emetic tartar. Although the operation of this was very satisfactory, the disease had not sufficiently abated, to indicate that the evacuation had been adequate to the violence of the symptoms. The pulse being strong, full, and frequent, and the pain of the head and back but little diminished, I resolved upon bleeding him. A vein was opened, and, after the loss of a few ounces of blood, being asked if his pain was better, he said it was; and continued to say he felt easier while the blood was running. His pulse not falling, about twenty ounces were taken, when it became slower and softer: he confessed himself now quite relieved from the pain in his head and back; and his head and hands having been sponged frequently with cold water and vinegar, he began to obtain some rest. He was again purged with calomel and jalap, each ten grains; and in forty-eight hours from his attack, he was out of danger. The preternatural heat of the skin had gone off, perspiration was renewed, and the pulse was slow and regular: for two or three days it was with

great difficulty the stomach would retain the smallest portion of any thing; but it gradually recovered its tone, under the use of nourishing and stimulating drinks; and the patient, in five or six days, was able to walk about. In this case is a brief outline of the more prominent symptoms of the disease, and of the treatment I felt constrained to pursue. The practice was afterwards varied, depleting more or less, as the state of each constitution seemed to require; and according to the violence of the attack. In almost every case of the officers and men, I was compelled, before any permanent control was effected over the disease, to take blood twice; fifteen or twenty ounces each time; to give three strong cathartics, and sponge the head, breast, neck, and hands every fifteen or twenty minutes with cold water and vinegar; from this great relief was obtained. Having early consulted Dr. Forsyth, an American gentleman, who has been educated as a physician in the United States, and whose correctness of judgment, and extensive observation on tropical diseases, gave me much assistance; and finding he approved of my plan of treatment, my anxiety became much less, and my confidence increased; but just at this time, I was myself seized with the fever. For five or six days Dr. Forsyth attended all the sick on board, and placed me under obligations to him for his kind and punctual attention, which cannot be forgotten.

To Dr. Forsyth I am indebted for an account of the first two days of the illness of commodore Perry, as I was unable to walk into the cabin to him. Having suggested to the commodore the indispensable necessity of immediately putting out to sea, to preserve the rest of the officers and men from the fever, as no safety seemed to arise from the adoption of every precaution; he immediately arranged his business with the government of Venezuela, and preparations were made to leave the place.

On Saturday, the fourteenth of August, a splendid entertainment was given to the commodore, by the government; to which his officers were invited. The guests were numerous; and, although conducted very temperately, all felt exhilarated with a few glasses of wine. At ten o'clock in the evening the company separated: the commodore went to Dr. Forsyth's,

at whose house he had spent his time, while at Angostura, with great comfort and cheerfulness; he retired to bed in fine health and spirits, and rested well all night. During the whole time he was in the place, he was particularly attentive to observe every thing that could contribute to preserve his health; and living with Dr. Forsyth, with whom he often conversed on those subjects, he said he had not felt at all indisposed since he had been in Angostura. On Sunday morning he arose well, but said he felt a little heaviness in the head. He observed to his friend, Dr. Forsyth, that he believed he would eat an orange, asking his opinion as to the propriety of it. The Doctor advised him to suck the juice of the orange, which he did. He felt very well during the morning, had several evacuations, which were attributed to the orange juice. Consulting Dr. Forsyth as to the propriety of keeping up the evacuation, to which the Doctor advised him, he sent me the following note.

Sunday morning.

SIR,

I wish you to send me this afternoon a small cathartic. Although not indisposed, I am not quite as regular as usual, and propose to take it merely as a precaution: probably a calomel pill may answer; at all events, let it be very simple; because I do not wish to be exhausted in my strength, in the slightest degree; and purgatives generally have that effect on me, unless they are very mild.

Respectfully, &c.

DR. MORGAN.

O. H. PERRY.

I sent him some cathartic pills, and advised him to take two of them at going to bed, or early in the morning. Every preparation having been made, on Sunday afternoon, at six o'clock, P. M. we left Angostura; and a fair wind, with the strong current, carried us down the river very expeditiously. On *Monday morning*, the sixteenth, he confessed he felt pretty well; but took two cathartic pills, and was much pleased with their effects. We descended the river rapidly, and he was employed in attending to his usual business. On the morning

of Tuesday, the seventeenth instant, the commodore arose and observed he had not felt as well during the time he had been up the river. He breakfasted as usual, and having finished the business of the morning, ordered his gig to be manned, and went off toward the side of the river to shoot some birds. While he was absent, frequent light showers fell, followed by a very hot sun-shine. Something of a heavy squall making its appearance, Dr. Forsyth advised him to return to the schooner immediately, warning him of the danger of getting wet, as he had been a little indisposed. He was able to reach the schooner before the rain, and all was well. We arrived at the mouth of the river in the evening; and, finding the wind fresh a-head, anchored on the bar. During the night the swell became pretty considerable; and the schooner shipped a sea over the stern, which falling into the cabin where he was asleep in his birth, wet the commodore without awakening him. About four o'clock on the morning of Wednesday, the eighteenth, he awoke with a violent chill; and called on Dr. Forsyth, who had taken a passage in the schooner to the United States, and who slept within a few feet of him, told him of what had happened, and of his chill. The Doctor advised him to cover himself up warm, and have a warm ptisan, which he did. His chill went off, and left him with a general numbness and soreness of his muscles, with much pain in his head and back, and a weight over the region of the stomach. During the morning he took some drinks, such as gruel and tea, kept himself at rest, but his pains and the heat of his skin increased. His pulse being much excited, resisting pressure from the fingers pretty well, and the pain in the head very severe, Dr. Forsyth advised him to lose a little blood; to which he consented. The Doctor kept his fingers on the pulse of the opposite wrist, as was our custom, and when about ten ounces had flowed, the pulse sunk, and becoming very weak, he was obliged to tie up his arm. The bleeding, though it gave him relief for a short time, left him much debilitated; and we perceived we had a different constitution and disease to manage, from those cases of young officers and sailors that we had so successfully treated before. His pulse made no effort toward recovering its former excitement: it became weak, soft, and about eighty-five; and after

a few hours, he was as bad as before. Having been so freely evacuated the three or four days preceding, and being himself afraid of too much exhaustion, a cathartic was not again exhibited till about four o'clock. Having become very partial to the pills I made him, he wished to take some of them; two were given; they operated well; various drinks were given him, and changed according to his taste; gruel, toast and water, barley water, a little wine, or porter and water, orange ptisan, pine-apple ptisan, and as we had a milch cow on board, he had wine whey; we also gave a little chicken water. Very little abatement of the symptoms were apparent. He complained much of the stricture over the epigastrium. His respiration became laboured and irregular; his inspirations were sometimes long, and then short, accompanied with a trembling and impaired action of the diaphragm. In the course of the night injections were used, and his usual supporting drinks given occasionally.

Thursday morning, the nineteenth, he had little pain. His pulse was frequent and soft; and although the motion of the artery was considerable, it was distracted; quivering, and distinct pulsations were scarcely perceptible. We continued to give him such drinks as were best for supporting his strength. His skin having become cool and moist, we had great hopes that the nourishment and drinks he was taking, would support and increase the powers of life. But in this we were disappointed; nothing seemed to alter his sensations, or change the state of the symptoms.

Toward evening he became still worse; the skin again became hot and dry, his head was much heated, the oppression at the stomach greater; and not having had an evacuation for the last twelve hours, we gave him a mercurial cathartic, in divided doses, which brought away a large quantity of feculent matter. His increased debility again indicated the suspension of evacuating remedies; large sinapisms were employed, and an attempt was again made to give support to the system, by porter and water, wine and water, &c. &c.

Friday, the twentieth. We to day have used no depleting means, but have endeavoured to compose his stomach, and give him support: towards evening he appeared much better;

was able to change his position, he rested well, his pulse became slow as natural, and regular; and, although some of the bad symptoms never left him, such as irregular respiration, deep sighing, and oppression over the epigastrium, yet, to the common observer, he appeared in no danger; and he himself was flattered with a speedy convalescence.

Saturday the 21st. This morning his debility is much increased, the heat of his head and of the skin almost as great as at any period: for this, his head and hands had been sponged with cold water and vinegar every half hour, and it always revived him and gave relief. His stomach had by this time become so extremely irritable, as to retain nothing; but in the afternoon he was better, had his drinks as usual, but passed a restless night.

Sunday, 22d. He was very restless, and all things appeared unpromising; we thought it time to again evacuate the bowels, and gave calomel grs. xij, followed by an injection. The injection brought away some bilious matter, but the cal. had no effect. About this time he was taken with spasmodic motions of the stomach and diaphragm, and a deep hiccup which distressed him every five, ten or fifteen minutes. The symptom seemed to alarm him a little, but he seldom expressed his apprehension; and when requested not to feel discouraged, he said he did not feel discouraged, that the great debt of mortality must be paid, and whatever might be the termination, he was ready to meet it. Nothing given but drinks to support the system. About twelve o'clock, the spasms of the stomach and the hiccup increased in violence. His inspirations were made with trembling and difficulty, and his thorax in breathing was imperfectly expanded. His pulse was slow and feeble, his skin and perspiration cold, and a space of about an inch wide around his forehead, about his eye brows, was as cold as dead matter. We continued our efforts to give support to the sinking powers of his body.

Monday morning. All appearances unfavourable, the restlessness not to be overcome. Gave him an injection, which came away in half an hour, and a small quantity of natural fæces came with it. The vomiting comes on every five minutes, the discharges appear a little darker, pulse slow,

feeble and irregular; skin moist and rather cold, restlessness and hiccup distressing; delirium occasionally; he complains of a burning and acute pain in the stomach, but has long intervals of ease between the paroxysms.

He now became apprehensive of the danger of his situation, and said he must go off in one of the paroxysms, if they continued much longer. He told us not to conceal from him his danger, that he would not allow it to accelerate his death. After a few minutes he was taken with a vomiting, and ejected from his stomach about a pint of dark-coloured fluid, not exactly resembling black vomit, but more like thick black dirty vinegar. He expressed much surprise to see it come from his stomach; and enquired where it came from. I then prepared some laudanum, æther, carbonate of ammonia and water, and gave him a tea spoonful every ten minutes; it relieved his vomiting and hiccup, and for about an hour he remained tranquil and easy. He requested me to call captain Claxton and Mr. Salter into the cabin, and with the most perfect composure of mind, he called on us to witness the arrangement of his affairs which in a few words he made. He said he had wished to do it for some hours, and felt himself much relieved in mind.

At twelve o'clock, we had beat up within a few miles of Port of Spain, Trinidad, where the ship John Adams awaited us, and a boat came off from the ship to meet us; upon informing him of this, he seemed much rejoiced; as his desire to get on board the ship was very strong, we had some hope left that we might get him in the spacious airy cabin of the ship. Mr. Turner, first lieutenant, Dr. Osborne, the surgeon of the ship, and Mr. Handy the purser, came on board us, and although his sensibilities were a good deal excited on meeting his friends, he kept himself perfectly calm and firm; and although his sufferings had by this time become acute, hope seemed for awhile to beam a little on his face. Dr. Osborne, Dr. Forsyth and myself upon ascertaining and deliberating on the symptoms, resolved to give calomel and camphor in divided doses, and endeavour still further to support the sinking powers of nature. In about an hour his strength was entirely sunk, a yellowness of the skin on the neck, breast and face

began to appear, his extremities became cold, and his skin clammy; he was no longer sensible of pain, his respiration became irregular and imperfect, and at half past three o'clock, he expired without a struggle.

Remarks.

I must be permitted to say, and Dr. Forsyth entirely agrees with me on the subject, that the case of Commodore Perry, was from the first, a case of yellow fever, which could not terminate otherwise than fatally. To any medical man who might have witnessed his illness, it must have been sufficiently obvious, that his constitution was most illy adapted to resist a disease dangerous under all circumstances. We are now unable to discover a different plan of treatment, which, applied to his condition, would have been attended with the least probability of success. Had evacuations been carried farther, death must have resulted sooner from excessive debility. Had they been less or suspended sooner, black vomit would have come on, in all probability, on the third or fourth day. His constitution from the very first seemed to sink under the disease, and at no time did the powers of life appear to obtain the least resuscitation. Among the unfavourable circumstances felt in the management of his case, the following may be mentioned: The want of a capacious and well ventilated apartment;—the extreme heat of the weather;—a prepossession which he had imbibed of the very dangerous and contagious nature of the disease, from the number of English officers who died on shore at Angostura;—an impatience to get on board his own ship, which was kept up by the impossibility of beating up to Port of Spain under four or five days; and we were unable to place him on deck, owing to frequent showers of rain.

The schooner being so small, he was often disturbed when in a comfortable posture and thrown into one disagreeable to him. But there were others which were favourable to assist in affecting his recovery. His medical attendants were anxious and vigilant. Dr. Forsyth or myself, or both of us, were always at his side. We watched the effect of remedies, and were ready to employ them as the change of symptoms might re-

quire. We managed to keep the cabin pretty cool, and tolerably well ventilated; and when it is recollected, that of between twenty and thirty cases of officers and men who were attacked only six deaths occurred, it must be allowed that the treatment of so violent and dangerous a disease was eminently successful.

Your obedient servant,

M. MORGAN.

FOR THE ECLECTIC REPERTORY.

Description of a new Machine-Bed, for the sick and persons with fractures of the lower extremities.

BY BENJAMIN H. COATES, M. D.

THE utility of contrivances for assisting patients with fractures, in removing their discharges, is now, I believe, pretty generally acknowledged. I have to describe one whose principal merit is its simplicity.

Earle's contrivance, by which the patient was raised up, while a pan was placed under him, is so troublesome and complicated, that it has never been much used in the Pennsylvania hospital. An useful substitute has been made by Dr. John Rhea Barton, which has been employed with advantage for several years in the hospital; and a description of it was published in the fifth volume of the Eclectic Repertory.

Three years ago, and about a year after this was invented, I made a working model of a bed on the principle I have now adopted; and it was shewn to Dr. Hartshorne and to the late Dr. Dorsey; but as the hospital was well provided with the others, no new ones were made, and it was resolved to wait until they were required for actual use. In the winter of 1817, and 1818, I shewed a working model to Dr. Physic; which he exhibited at his lectures. It was not put in practice till the last autumn and winter, when some of the bedsteads were made for the hospital, and they have been in constant use ever since.

The apparatus consists of a perforated bed, with a cushion filling the vacancy, made to fall with a hinge, by drawing up a slider, and to be pushed up again into its place, and supported there by a solid board, when the slider is thrust down. By the same motion, a tin bed-pan is moved under the whole or withdrawn to the foot of the bed.

For this purpose the bed is provided with a board bottom, instead of one of sacking. Two holes are required in the slider. One of them, at the lower end, is merely to receive the pan in clefts, passed so as to permit its removal in a direction parallel to the bed side. The other is for the descent of the cushion and circular piece of board to which it is attached, and for the place of operation of the bent piece which forces it up. The remainder of the upper part is flat, to be pushed under the cushion and circular board, and to support them while at rest.

The handle is a flat piece of iron, between three and four feet long, with one end turned up to afford an hold to the hand, and the other forming a regular curve downwards, to tilt up the cushion and board, and then act on them as a wedge.

The cushion is conical, particularly in the direction in which it rises and falls, and both this and the circular board smaller than the aperture in the slider through which it moves, to avoid entanglement in their motions through it. In bedsteads of convenient width for hospitals, the whole is placed obliquely. The handle passes upwards within reach of the right arm of the patient, and the pan is protruded to the side and foot of the bed, in a situation convenient for removal; at the same time the smell is kept at a distance from the patient's head.

In the annexed plate, fig. 1. is a perspective view of the whole apparatus as in actual use; in which may be seen the bedstead, part of the mattress, the slider with its two holes, the flat iron rod, the pan and the clefts or strips of wood in which the moveable parts slide. The end of the rod is seen at the bedside in a situation for the right hand of the patient; and the pan is seen at the opposite side near the foot of the bed. The cushion is here forced up, and the wide part of the slider sustains it.

Fig. 2. Is a view of the slider and iron part AB.

Fig. III.



Fig. IV.



Fig. II.

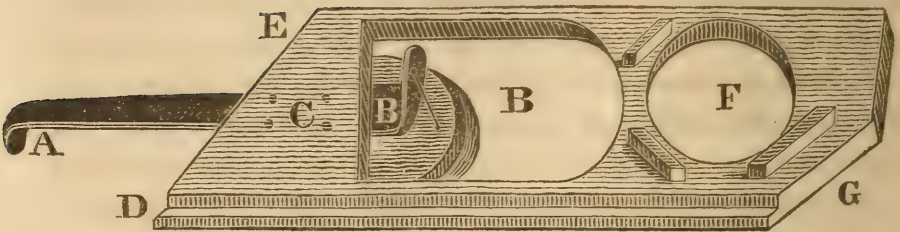
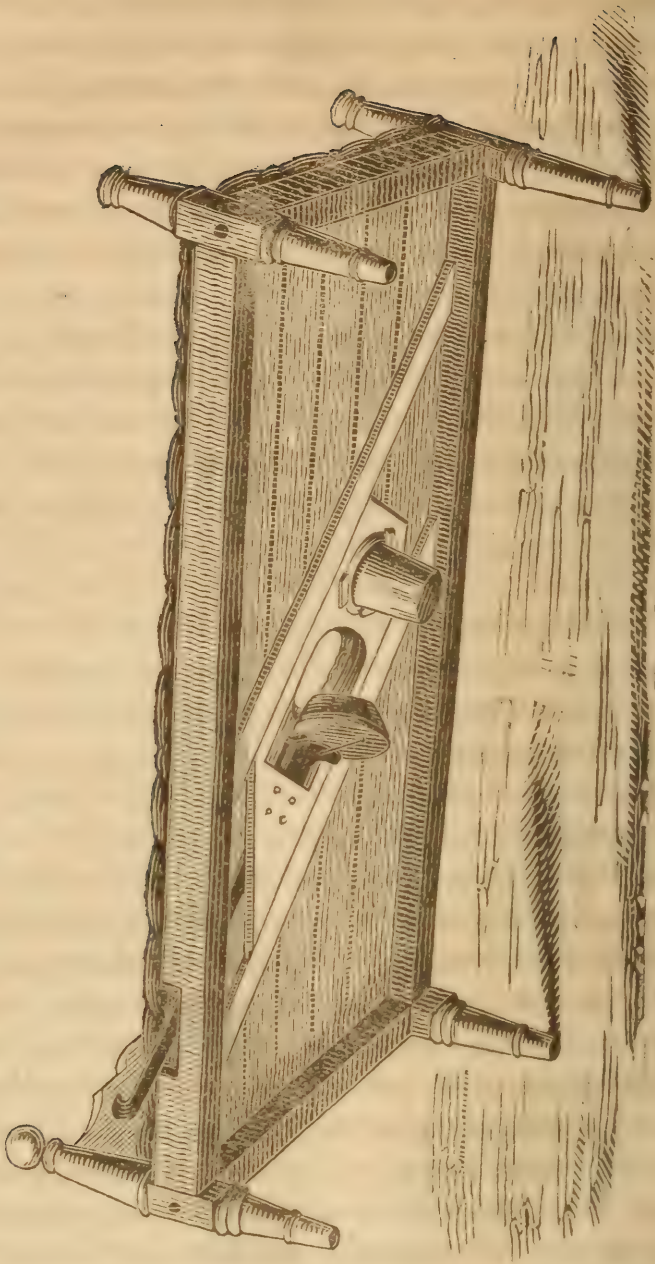


Fig. I.



C is placed in the middle of the flat part. At DE it is sawed off obliquely at the edge of the bedstead, when drawn up to it. The letter B is also placed in the vacant space for the fall of the cushion. F, is the circular hole with cleets for the attachment of the pan. At G the end of the slider is again sawed off obliquely, so as to coincide, when thrust down, with the bedside. Two of the cleets are observed to be placed parallel to the bedside, with a third to operate as a check at the side of the others.

Fig. 3. Is a plan, and fig. 4. is a perspective view of the conical cushion with the board to which it is attached. These are designed to show its peculiar form;—sloping a little on all sides, but principally on the side remotest from the hinge, so as to avoid entanglement in rising and falling. To produce this, it is necessary that the top of the cushion be narrower than the bottom or than the board; for instance, in the proportion of six and a quarter to seven and a half inches. The corresponding excavation of the mattress it is difficult to exhibit, but it must be made by similar measures.

The dimensions of a bed made on this plan, was six feet long, by three feet one inch wide in the bottom-board, and, according to the carpenter's term, in the rabbett. The slider was fourteen inches wide, and in the middle line thirty inches long. The circular board was seven and an half inches in width, and the top of the cushion six and a quarter inches. The circular hole in the slider seven and an half inches wide; the square, one inch long by eight inches wide. The pan inside, seven and an half inches wide; and outside, including the rim, nine inches and one-third.

The advantages, over others, contemplated in this bedstead, are principally its simplicity, and the circumstance of its affording a solid support for the cushion, not depending on the tightness of ropes. The importance of this contrivance, by which a very large portion of the weight of the body is supported, must be obvious to those accustomed to fractures. The projection backwards of the sacrum, ilia, and the great glutei muscles works itself a hole in the bed, tending to disorder the fracture, and if not prevented, to bring itself in contact with the hard board at the bottom. Hence pain and danger of

worse consequences, in the form of sloughs from pressure. This is to be prevented in the present apparatus by a thick cushion with a solid, immoveable, board support.

In addition to this, the machine, in common with some others, can be worked by the patient himself, provided he has the use of his right arm; and it protrudes the pan with its offensive contents to the foot of the bed, in a situation remote from his smell and respiration, well covered and convenient for removal. On enquiry of the nurses and others connected with its employment, the machine has been found to answer those objects in a satisfactory manner.

The apparatus in use at the hospital is tight and convenient; and not the least smell is at any time perceived from it, on entering the room. It, in one instance, while new, worked stiffly for a few days, but soon gained more facility, and no difficulty has been since experienced.

September, 1819.

Observations on Diseased Ovaria.

BY EPHRAIM M'DOWELL, M. D.

DEAR SIR, *Sept. 1819.*

I AM induced to make this statement, principally, in consequence of the observations of Dr. Henderson, which appeared in a number of the *Repertory*, published twelve or fifteen months since; on ovarian disease, and abdominal steatoma.

Since my former communication, I have twice performed the operation of excision; which cases are subjoined.

I shall in the first place take some notice of the remarks of Dr. Michener, which Dr. Henderson in his dissertation has thought worthy of notice. The number of the *Repertory*, containing the above mentioned remarks, I have unfortunately lost; but believe that I remember most of his principal strictures. In the first case related by me, in Vol. VII. the Doctor appears to take exception to the length of the incision, by pointing out the sentence which stands thus; "I made an incision about three inches from the musculus rectus abdominis on the left side, continuing the same about nine

inches in length." As I did not actually measure the incision, it would, perhaps, have been better to have said, an incision was made, about three inches to the left of the musculus rectus, extending from the margin of the ribs to the os pubis, on a woman whose abdomen was distended by a tumour, to an enormous size. He likewise objects to the parietes of the abdomen being contused, in consequence of the tumour resting on the horn of the saddle, during the patient's journey to Danville. Observing that the "horn of the saddle is on the right side, and the tumour was on the left." Now, with all due deference to the Doctor's knowledge in surgery, and the structure of *side saddles*, I think it would not be difficult to conceive, that a tumour weighing upwards of twenty pounds, would fill the whole abdomen, and although attached to the left ovarium, the weight and bulk must have been almost, if not quite as great, on the right side as on the left. I would observe, that my patient was a woman of small stature; her abdomen had become so pendulous, as to reach almost to her knees; the size of the tumour was ascertained from actual weight. Had the left side of the abdomen been contused, I would either have delayed the operation until the contusion was removed, or operated on some other part. I never have been of opinion, that bruised flesh would heal so readily as sound; which matter I esteem of essential importance to success in this operation. The Doctor also objects to another assertion in this case, viz: "When I visited her on the fifth day, I found her engaged in making up her bed." The Doctor's scepticism, alone, appears to have carried him through the statement, and I am surprised that he will even admit the fact of her returning home, in five and twenty days after the operation, on horseback; a distance of seventy miles, and in the depth of winter.

Dr. Henderson thinks I was entirely too inconsiderate in my detail of the cases of diseased ovaria; I thought my statement sufficiently explicit to warrant any surgeon's performing the operation when necessary, without hazarding the odium of making an experiment; and I think my description of the mode of operating, and of the anatomy of the parts concerned, clear enough, to enable any good anatomist, possessing the

judgment requisite for a surgeon, to operate with safety. I hope no operator, of any other description, may ever attempt it. It is my most ardent wish, that this operation may remain, to the mechanical surgeon, for ever incomprehensible. Such have been the *bane* of the science; intruding themselves into the ranks of the profession, with no other qualification but boldness in undertaking, ignorance of their responsibility, and indifference to the lives of their patients; proceeding according to the special dictates of some author, as mechanical as themselves, they cut and tear with fearless indifference, utterly incapable of exercising any judgment of their own in cases of emergency; and sometimes, without possessing even the slightest knowledge of the anatomy of the parts concerned.

The preposterous and impious attempts of such pretenders, can seldom fail to prove destructive to the patient, and disgraceful to the science. It is by such this noble science has been degraded in the minds of many, to the rank of an art.

No case of diseased ovaria has come under my observation, similar to the one described by Dr. Henderson. The tumours extracted by myself, I have kept by me, in a state of preservation; they have been submitted to the inspection of most, if not all the physicians who have visited me. Their opinions, as to the nature of the disease, have all accorded with my own. In our most scrupulous examinations, we were never able to discover any portion of the tumours to be of a natural or healthy structure; the whole exhibition was that of a morbid undistinguishable mass, which myself and others of the faculty, who were present at the operations, were of opinion, had once been the natural ovaria; in as much as no ovarium remained on the side from whence the tumour was extracted. This was as clearly evident as it could have been on dissection after death; my incisions were made so free and extensive, that I have always performed every part of this operation by sight.

Such ovaria as I have described as dropsical, contained a gelatinous fluid in a sac about half an inch in thickness, and of a spongy texture; such as I have denominated schirrus, were of a spongy texture throughout, and somewhat elastic. Those affected with schirrus, complained of lancinating pains in the parts affected; which, from their description, were simi-

lar to the pains in other schirrous glands. The dropsical ovaria, are attended with a dull pain, and produce a most oppressive sense of weight in the abdomen. By these symptoms, and by a nice sense of touch, the species may generally be distinguished from one another. How to distinguish them from steatoma and other affections which those organs are liable to, I shall not pretend to define, nor, in the present state of knowledge, do I think it at all necessary; nor even the distinction from one another.

Excision I esteem less perilous than any other mode of treatment; and the only certain cure for either of them. For schirrus and steatoma, no other relief, within our knowledge, is practicable.

The dropsical ovaria may be relieved by tapping with a large trocar. But the relief is only temporary, and would be attended with no inconsiderable danger. Some further reasons for my aversion to the trocar, I will relate hereafter.

The second case in which I operated for diseased ovaria, was the case of a negro woman in this neighbourhood. On exposing the tumour (as related in the Repertory, Vol. VII.) it adhered so firmly to the neighbouring parts, that I did not attempt its extraction, but made a free incision into it with the scalpel, and discharged its contents; she recovered of the operation, and I thought her well of the disease; but, she informed me some short time since, that it had been growing for the last twelve or eighteen months, and says it is now, about the size it was when I opened her six years ago.

None of my patients have been able to give me any satisfactory account as to the origin of the disease; with some it commenced some months after delivery. The first supposed herself pregnant, and went on to make the necessary preparation for her lying-in; the time for her delivery being protracted to a great length, and her anxiety and doubts increasing, I was called in, and immediately, on examination, *per vaginam*, found she was not with child.

CASE I.

In April, 1817, I operated on a negro woman from Garard county; extracting a schirrous ovarium, weighing five pounds.

The incision was made near the linea alba; as in cases formerly related, I tied a cord firmly round the ligament attaching it to the uterus, and cut away the ovarium; but owing to the shortness and sponginess of the part, the cord slipped off, before I laid the ovarium out of my hands, and a profuse discharge of blood took place. I immediately drew the uterus to the external incision, and commenced tying up the bleeding mouths separately. This also, in consequence of the diseased state of the parts, proved only of partial efficacy, as several of the ligatures cut through, on tying them. I now thought it all over with my poor patient, but arming a needle with a strong ligature, I passed it round the ligament; securing it in its place by taking several stitches over its surface as I passed it round, and firmly tied it. By turning her nearly on her stomach, I was able to get most of the blood out of the abdomen, using my hand to extract the coagulated portion. The incision was then closed by the interrupted suture, and strips of adhesive plaster. She recovered happily; but, I am told her health is not good; the account I had of her was awkwardly given; from what I could learn, her complaint is hysterical. This, though the smallest ovarium I have ever extracted, was much more troublesome to the patient, than in any previous case. Besides experiencing severe lancinating pains in the parts, she was seldom able to discharge her urine, without getting almost on her head, in consequence of the tumour falling down into the pelvis, and compressing the urethra.

CASE II.

A negro woman from Lincoln county, was brought to me in April, 1818, supposed, by the different physicians who had attended her, to be affected with ascites; she had been under their care about eighteen months. On examining her, I could very plainly discover the fluctuation of fluid in the abdomen, and for some months administered medicines for ascites, without effect; despairing of the power of medicines, I at length tapped her, and discharged thirteen quarts of gelatinous fluid, such as I had before met with in dropsical ovaria, of so thick a consistence, that I found it extremely difficult and tedious to discharge it. In two months after, I found it necessary to tap

again; during the process of discharging it a second time, the opening was frequently stopped by viscid portions of the jelly, which were broken by introducing a probe; when the abdomen was pretty well evacuated, I discovered, with the probe, a firm substance, which, on minute examination, I found to be of considerable size. I at once supposed the existence of a dropsical ovarium, in which I was confirmed, on finding the uterus empty by examination per vaginam. Some months after she was again tapped; at which time, I made the opening large enough to admit my finger; by which means, I was able to ascertain the nature of the disease beyond a doubt. I informed her master what was certainly her situation, and that nothing but excision could affect a cure. My advice was not immediately followed, nor until after she was tapped a fourth time; a week or two after which, she was brought to Danville, to undergo the operation, which was performed May 11, 1819. The diseased ovarium being on the left side, and evidently dropsical; the incision was of course made on the left side. On exposing the tumour, it was found to adhere to the parietes of the abdomen; and to the intestines, by slender cords which were easily separated with the hand, and which caused a slight effusion of blood. To the uterus, two strong ligaments adhered; one, the natural ligament, attaching the ovarium to the uterus, the other, an artificial one, attached to the fundus uteri: which appeared to be composed of the abovementioned slender cords, compacted together. I then tied fine cords of silk firmly round each of these ligaments, discharged the contents of the tumour, and cut it away.

There were sixteen quarts of gelatinous fluid discharged from the tumour and abdomen. The dressings and precautions were the same as in other cases. The second day after the operation, she was affected with violent pain in the abdomen; together with an obstinate vomiting. She was blooded as copiously as her strength would allow, but without producing any abatement of the pain or vomiting. On the third day she died. On examination after death, the uterus, contrary to expectation, appeared natural and uninflamed, the right ovarium healthy, the silken cords were securely, and properly fixed, and not in a situation likely to injure the adjoining parts. Her

death had proceeded from peritoneal inflammation. This membrane, throughout its whole extent, appeared greatly inflamed, and the intestines largely inflated.

I was assisted in this operation by my nephew, Dr. William A. M'Dowell. Doctors Weizegar, Tomlinson, and Horr were present.

On examining the substances we had removed, the contents of the sac presented a variety; different portions of the fluid were of different colours: semitransparent, white, brown, and yellow. There was also contained in the sac, a considerable quantity of hair; which grew from the inner surface. Enveloped in the inner substances of the sac, we found a bone, resembling, very much, in shape, the front tooth of a cow.

From the circumstance of the hair and bone, one or two of the physicians present, were inclined to believe the disease originated from an extra uterine conception; and that all of the fœtus had been absorbed, save the hair, and single bone, which was found. This question I submit to the faculty. As for myself, I think it as reasonable to suppose, the hair and bone in this unnatural situation, was the result of a morbid action. She had been delivered of a child two years before the operation, her health during that time was never good, but she had no reason to believe herself pregnant; and if it were the case, I doubt whether a whole fœtus could be so nearly absorbed in two years. There was likewise a round hole in the sac, which, from the levelled appearance of its edges, appeared of long standing; the whole was about the size of a musket ball. And there is no doubt, that the gelatinous fluid escaped through this aperture into the abdomen. This ovary, when brought into view, was of a large size; which is the more remarkable, when we consider the enormous quantity of fluid which had been drawn off at different times, by the operation of paracentesis abdominis. During the evacuation, a bandage was kept bound tightly round the abdomen; and considerable pressure was made with the hands, in order to evacuate its whole contents. In an attempt to draw off the contents of such a tumour with the trocar, it would be impossible to perforate all the vesicles;* and such only, as were

* That this is the structure of diseased ovaria, I infer, both from autho-

pierced, would discharge their contents. While one portion of the vesicles of the ovaria would discharge themselves into the abdomen, another portion would remain diseased in the original way. Thus compounding in the system, two of the most deplorable diseases to which it is liable.

EPHRAIM M'DOWELL.

DR. JAMES.

Case of Umbilical Hernia, with the Appearances on Dissection.

BY BENJAMIN HUGER, M. D.

Charleston, Aug. 3, 1819.

DEAR SIR,

IT may perhaps be necessary for me to apologize for the intrusion I am about to make upon your leisure, yet I trust that the nature of the subject upon which I write will prove a sufficient excuse. That branch of our profession, which it is your province to teach in the University, is the one to which I have, in a peculiar manner, devoted myself for the last sixteen months. Without further remark, I shall proceed to detail a case of *umbilical hernia*, which, in addition to its being *congenital*, has presented appearances not often witnessed.

On Friday, 30th of July, at an early hour in the morning, Mrs. A——, was delivered of a male child, by a midwife who had always attended her in her previous confinements. The labour was natural, and attended with less suffering than is usual; two severe pains, to use her own expression, were all that she had to complain of. Immediately upon the birth of the child, the midwife discovered something at the umbilicus, which she thought was a second head; yet being a *prudent woman*, did not alarm the mother at the moment. The child being separated, and the placenta removed, the father was informed that something preternatural existed, and that medical aid was necessary. The family physician being sent for, found the child labouring under umbilical hernia, and decided after examination, that it would not be prudent to attempt its return, and of course that nothing was to be done.

rities, and from the difficulty in discharging their contents. I have always been under the necessity of introducing my hand, and raking it forth; the obstacle to the discharge being always a membranous structure.

On the 31st of July, I had an opportunity of seeing the child, which was as healthy and well, apparently, as could have been wished. It had not nursed, because the attendants were unwilling that the mother should see it, yet it eat heartily, and digested well; the bowels were in good order; the passages were natural, both as regards consistence and colour. At this time the tumour presented a most curious appearance. The abdominal integuments were wanting to about the size of a saucer, and the protruding intestines formed a tumour as large as the head of a small child, covered only by the peritoneum. Through this coat the intestinal tube could be plainly seen; much inflammation existed, and great sensibility to the touch was manifested; the vermicular motion could not be perceived, though we were all anxious to view this part of the process. August 1st, I did not see the child in consequence of professional avocations. The bowels during this day were, I understood, in good order. August 2d. The child died this morning, after having lived about seventy-two hours. Many objections were made to our examining the body, yet we at length obtained permission to do so. The tumour presented the following appearances. Upon dividing the peritoneal sac, the small intestines were discovered in a state of violent inflammation, adhering to each other in all possible directions. Having cautiously raised these, we found the liver, spleen and large intestines, the rectum excepted, all forming part of this remarkable tumour. The whole of the liver was not protruded, but by far the greater portion. The kidneys were in their natural situation, and so was the rectum. The stomach was pushed down near the orifice of the sac, but had not yet entered it. With these two exceptions, i. e. stomach and rectum, all of the abdominal viscera were contained in the hernial sac. The child died in convulsions, no doubt, from inflammation in the intestines. Had there been an artist in this city of any eminence, you should have had a correct drawing of this case. Should this description prove satisfactory to you, the only object I have in writing it will have been answered.

I am, my dear Sir, with the utmost respect, your's, &c.

B. HUGER.

P. S. There were present at the opening of the sac, Drs. C. Glover, H. Frost, and myself.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

National Pharmacopœia.

[From the New-England Journal of Medicine and Surgery, for July, 1819.]

AT a meeting of the Delegates from various Medical Societies and Institutions in the Eastern District of the United States, convened on the subject of a National Pharmacopœia, in Boston, on the first day of June, 1819—Present as Delegates the following gentlemen:—

From the Medical Society of *New-Hampshire*—Drs. Reuben D. Mussey, Ebenezer Learned, Matthias Spaulding, and John P. Batchelder.

From the Medical Society of *Massachusetts*—Drs. John C. Warren, John Gorham, Jacob Bigelow, James Thacher, and George C. Shattuck.

From the Medical Society of *Vermont*—Drs. Erastus Torrey and Selah Gridley.

From Brown University in *Rhode-Island*—Dr. William Ingalls.

From the Medical Society in *Rhode-Island*—Dr. Solomon Drowne.

From the Medical Society in *Connecticut*—Dr. Eli Ives.

The Convention made choice of Dr. WARREN, of Massachusetts, as Chairman, and Dr. BIGELOW, of do. as Secretary.

The Delegates being called on to submit their plans for a *Pharmacopœia*, it appeared that such a plan was prepared by the Delegates from *Massachusetts*, but that no other plan was in readiness to be submitted,

Whereupon it was *Voted*, That the Pharmacopœia prepared by the Delegates from *Massachusetts* be adopted as the ground work of the *Pharmacopœia* of this Convention, and that a Committee of one person from each Delegation be appointed to suggest any alterations or amendments in the same, which are proper to be made.

The following gentlemen were appointed a Committee for

the said purpose, viz.—Drs. MUSSEY, GORHAM, TORREY, INGALLS, and IVES.

The Convention adjourned till 6 o'clock, P. M. to hear the report of their Committee.

Met agreeably to adjournment, at 6, P. M.

The committee reported in part and had leave to sit again.

VOTED, That the same committee be instructed to report whether it is expedient for this Convention to send Delegates to a National Convention at *Washington*, and if any, what number.

Adjourned to meet when the committee should give notice that their report was ready.

June 2. The Convention met, on being notified that their committee was ready to report.

The committee then reported certain additions and alterations, which were severally acted on by the Convention; after which the following sections of the report were adopted.

1. That the Pharmacopœia of the Massachusetts Medical Society, as it is now revised, be adopted by this Convention as their Pharmacopœia; and be presented as such to the General Convention to be holden at *Washington* in January next.

2. That the number of delegates sent by this Convention to the General Convention shall be two, and that they shall be chosen by ballot.

The Convention then proceeded to the choice of two delegates to the General Convention by ballot, and Dr. IVES and Dr. BIGELOW were chosen.

It was voted, that in case the delegates thus chosen should be prevented from giving their personal attendance at *Washington* that they be empowered to depute a third person to represent this district in the General Convention.

In order to afford an opportunity for all further additions and improvements which might be proposed, the delegates were authorised to receive communications relative to the subj ct, and to transmit them to the General Convention.

Voted, To adjourn *sine die*.

Comparison of the Heat at Philadelphia, in 1818 and 1819.

A comparison of the heat of June and July, in the years 1818 and 1819, by the same thermometer, placed in the same situation, in this city. Also, a list of the number of deaths in the City and Liberties, in the same two months of those years.

THERMOMETER.

	IN 1818.			IN 1819.		
	At sun-rise.	At 3 P. M.	Mean.	At sun-rise.	At 3 P. M.	Mean.
	Out.	Within.		Out.	Within.	
June,	68.1	78.0	73.0	65.9	79.4	72.6
July,	71.2	80.7	75.9	68.4	80.8	74.6
Average.	68.7	79.4	74.0	67.2	80.1	73.6

By the above table it appears, that the mean heat of the two months, was $1^{\circ} 5'$ lower at sun-rise this year than the last—that at 3 P. M. it was seven-tenths of a degree hotter, and on the average on sunrise and 3 P. M., the present has been four-tenths of a degree cooler than the year 1818.

Those who believe that the prevalence of malignant fever in our city, is affected by the heat of the summer, may hence draw a favourable conclusion, as this season is not on the whole hotter than the last.



Mortality in the City and Liberties of Philadelphia in June and July, of 1818 and 1819.

Adults. Children. Total.

In nine weeks of 1818, May

30, to August 1, died, 292 249 541

In nine weeks of 1819, May

29, to July 31, died, 233 324 557

By this statement, it appears that the decrease of the deaths of grown persons has been 59 in favour of the present year, and the increase of the deaths of children has been 75—the total increase only 16.

Those who are curious in examining such subjects, may be gratified by turning to the *Daily Advertiser* of the 9th, or the *Freeman's Journal* of the 11th of September, 1817. C. E.

Poulson's Paper.

VACCINATION.

By the reports of the Physicians employed by the City Councils, for the gratuitous Vaccination of the poor, it appears that *twelve hundred and five* persons have been successfully vaccinated, from July 1, 1817, to June 30, 1819.

Copy of the Report to the Secretary of State for the Home Department, from the National Vaccine Establishment, dated 8th April, 1819.

[From the London Medical Repository, for July, 1819.]

To the Right Honourable Lord Viscount Sidmouth, Principal Secretary of State for the Home Department, &c.

*National Vaccine Establishment,
Percy Street, 8th April, 1819.*

MY LORD,

THE Board have the honour of reporting to your Lordship, that during the year 1818, the number of persons vaccinated at the stations in London and the vicinity, have amounted to 6,289; and their correspondents throughout the kingdom have reported that they have vaccinated 57,897. These numbers, however, are not to be considered as the whole, for many Surgeons who are supplied with vaccine lymph from this establishment, do not report the entire numbers of those whom they vaccinate.

From the first establishment of the Board in 1808, an annual increase has taken place in the demand for vaccine lymph, of which 50,116 charges have been distributed to the public during the preceding year.

The Board have much satisfaction in laying before your Lordship unequivocal evidence of the increasing advantages of the Jennerian discovery: for it appears from the bills of

mortality of London, that instead of two thousand deaths by small-pox, which were the annual average previous to the practice of vaccination, there died last year only four hundred and twenty-one.

It will be gratifying to your Lordship to know, that independently of the continued distribution of vaccine lymph from this Board to all parts of the British dominions, the reputation of its purity is such, that applications for a supply are often made from foreign countries.

Five cases have been reported to the Board, of vaccinated persons who have subsequently died of small-pox. In one of these cases it was clearly ascertained, that the only vaccine vesicle which had been excited, was disturbed and broken in its progress, which there is great reason for believing has been a frequent cause of the insecurity of vaccination; in the other cases no detail respecting the vaccination could be obtained; and they were, moreover, all vaccinated at a period of time when the mode of vaccination, and the management of the vesicle, were not well understood.

In several parts of the United Kingdom, particularly near Edinburgh, an anomalous disease, bearing some resemblance to small-pox, has appeared in many persons. It has been described by several professional gentlemen of great eminence and experience. From their statement, it appears, that this eruption attacked indiscriminately persons who had been previously vaccinated, who had had the small-pox, or who had not gone through either disease.

Of whatever defined nature this eruption may be considered, it is highly gratifying to remark, that no death occurred in any person who had been previously vaccinated, neither was it in them so violent; whereas in many others it was malignant, and proved mortal to several. It has therefore been justly concluded, from the investigation which has been instituted in Edinburgh, that the circumstances which have occurred in the history of this eruption, more strongly confirm the utility of vaccination.

As a diversity of opinion, however, has prevailed of the precise nature of this eruption, among those who witnessed it, considerable alarm has been excited in the public mind. The Board are unable to form any very decided opinion upon this

subject; because, in the cases where this varioloid disease is stated to have occurred subsequently to small-pox, the symptoms of the small-pox have not been detailed; and in the cases where it followed the vaccine, the particulars of the vaccine process, except in a few instances, are omitted. But in these few it appears, that the vaccine process had not been conducted on the plan recommended by this Board, and which experience has proved to be most efficacious.

In London, some eruptive cases have occurred in persons who had been previously vaccinated: these the Board have had opportunities of examining; and it has been discovered by the directors, that the eruption in most instances was the chicken-pox; in a few, the mitigated small-pox; and it should not be passed unnoticed, that in all these latter cases vaccination had been performed and conducted in the manner which was originally frequently practised, before the adoption of the superior method which has been recommended by the Board, and which they have taken much pains to inculcate in their printed directions.

For it is a fact which cannot be too strongly impressed upon the public, that there is a considerable difference of success in the different modes of inserting and conducting the vaccine. Hence the Board are informed by some Surgeons, that a portion of their vaccinated patients have been subsequently affected with small-pox, though in a mild form; while other Surgeons state, that they have vaccinated many thousands without a single failure. As, however, the cases vaccinated at the stations of the Board are all registered, they possess the sure means of ascertaining the real effects of correct vaccination.

From the foundation of this Establishment in the year 1808, to the present year, there have been vaccinated at these stations in London 52,253 persons. Only four of these are yet known to have had the small-pox afterwards, and these were never very seriously ill. This triumphant success of the National Vaccine Establishment in London, where the small-pox infection is always unfortunately prevalent, proves decidedly, both the superior virtues of the vaccine, and the excellence of the method of practice adopted and recommended by the Board. They therefore feel it an imperious duty strongly to urge the

medical profession at large to sacrifice their peculiar notions of practice, however ingenious, and to adopt literally that plan which by much experience has been found so effectual.

The Board feel it a duty to submit to his Majesty's Government, the propriety of encouraging the enforcement of the existing laws against the exposure of persons labouring under the small-pox, as a mean not only of preserving the community from variolous contagion, but of more generally diffusing the inestimable advantages of the Jennerian discovery.

J. LATHAM,

President of the Royal College of Physicians.

HENRY AINSLIE,

E. D. NEVINSON,

RICHARD HARRISON,

G. D. YEATES,

} Censors of the Royal
} College of Physicians.

T. KEATE, Master of the Royal College of Surgeons.

DAVID DUNDAS,

THOMPSON FORSTER, } Governors of the Royal
} College of Surgeons.

By order of the Board,

JAMES HERVEY, M. D. Registrar.

University of Pennsylvania.

The Medical Lectures will commence, as usual, on the first Monday of November.

Anatomy,	by Dr. Physick,
Practice of Physic, &c.	Dr. Chapman,
Midwifery, &c.	Dr. James,
Chemistry,	Dr. Hare,
Surgery,	Dr. Gibson,
Materia Medica and } Pharmacy,	Dr. Coxe.

Philadelphia, September 8.

Poisonous Drugs.

By the bill now in Parliament, to protect the public in the sale of poisonous drugs, it is proposed to make it imperative on all apothecaries and others to affix a printed label, with the word 'poison,' on every phial, box, or parcel, into which they

put white arsenic, corrosive sublimate, acetate, carbonate, muriate, or nitrate of barytes, oxalic acid, sugar of lead, prussic acid, tartar emetic, solid opium, or laudanum sold by them. All arsenic kept for sale is to be mixed with carbon, and all oxalic acid with rose pink. Penalties to be recovered upon information and conviction before a justice of the peace.

London Newspaper.

PENNSYLVANIA HOSPITAL.

Patients remaining in the house, April 25, 1818,	174
Admitted from that time to April 24, 1819,	718
	—892
Of these the number cured, is,	415
relieved,	103
removed,	55
women safely delivered,	24
infants born and well,	19
discharged disorderly,	3
eloped,	22
dead,	54
remains,	197
	—892

Obituary.

Died June 16, 1819, near Alexandria, District of Columbia, Doctor WARWICK P. MILLER, aged twenty-three years.

The Madhouse at Aversa, Kingdom of Naples.

This establishment will in a very short time be classed among the principal institutions of useful arts and manufactures. M. Linguiti, director of this hospital, which is the only one of its kind in Europe, makes continued experiments to cure these unhappy people; from which he always obtains the result, that moderate work, combined with agreeable amusement, is the best means. For which reason there is at present in this house a printing office, where several works have already been printed, and at which many of these unhappy people are employed.—Others, who after the paroxysm is over, recover for a short time the use of their reason, are engaged in making translations from the English and French into the Italian lan-

guage. Besides this, many are occupied with music, others with husbandry and various other works, but particularly so in a manufactory of woollen cloth. By this means this miserable class of people, once an incumbrance to their families, become useful to society, and put many idlers to the blush. This kind of treatment is introduced not only in the hospital for male patients, but also in that of the women. M. Linguiti manages the whole establishment with wise economy. The table is always served with silver, and the whole house is handsomely fitted up; so that wherever the inhabitants turn their eyes they find something to relieve the mind. Formerly the windows were secured with iron bars; but instead of this there are now flowers curiously made of iron, and painted from nature, as if growing, which remove every idea of forced confinement. A handsome domain adjoining the hospital, serves for the recreation of the patients.

MEDICAL STATISTICS.

[From the London Medical and Physical Journal, for June, 1819.]

Extracts from the Bills of Mortality, drawn by the twelve Municipalities of Paris, for the year 1818.

The number of deaths in the city during the year, was	21,821
Of which there happened in private residences,	14,478
Of the male sex,	7,183
female,	7,295
The remaining	7,343
took place in hospitals; of which 3,633 were males,	
and 3,710 females.	

The number of persons who died from small-pox, was - 682

It is well known, that this afflicting result from the small-pox, the ravages of which have lately been progressive, can only be attributed to the influence of the priests, who preach against vaccination.

Amongst the 21,821 deaths, are comprised 257 which occurred in jails, or of persons whose dead bodies were deposited in the offices of the police; of which there were 202 males and 55 females.

Those from suicide have not been distinctly calculated, but the number appears to have been very considerable; and it has, for several years past, progressively increased.

The principal causes of mortality are stated as follows:

	Men.	Women.	Total
Fevers, putrid or adynamic, - - -	400	443	843
----- malignant or ataxic, - - -	391	424	715
----- intermittents, - - -	171	319	490
Phlegmasiæ, cutaneous, - - -	746	649	1,395
----- of the mucous membranes, -	1,237	1,453	2,690
----- of the serous membranes, -	202	281	483
----- of the cellular tissue and the parenchymatous organs, -	1,454	1,858	3,312
Comatose affections, - - -	496	503	972
Spasmodic ----- - - -	787	732	1,519
Local nervous ----- - - -	501	512	1,013
Organic lesions, general, - - -	1,895	2,063	3,958
-----, particular, - - -	802	900	1,702
Gangrenous inflammation, - - -	80	101	181
Puerperal women, - - -		75	75

Many children died from spasmodic affection, at an early age; for instance:

From one day to three months,	250
— three months to six months,	126
— six months to one year,	232
— one year to two years,	341
— two years to three years,	117

	Males.	Females.	Total.
There died before the age of three months,	2,202	1,752	3,944
Before the age of two years, - - -	3,434	3,033	6,467

The total number of deaths between two and five years, was - - - - - 1,784

Between five and ten - - -	1,034
ten and twenty - - -	1,257
twenty and thirty - - -	1,658
thirty and forty - - -	1,480
forty and fifty - - -	1,568
fifty and sixty - - -	1,786
sixty and seventy - - -	2,281
seventy and eighty - - -	2,006
eighty and ninety - - -	781
ninety and ninety-five - - -	59
nety-five and a hundred - - -	7
Above a hundred - - -	0

MEDICAL BENEVOLENT SOCIETY.

[From the London Medical Repository, for July, 1819.]

Medical Benevolent Society.—This Society is founded, in the first place, for the relief of those Members who are in distressed circumstances from mental or bodily infirmity, or from other causes, or who shall be considered deserving assistance, *although they may not have attained the age of sixty years*; and, secondly, to secure to those persons who shall become Members of the Society, and shall have subscribed, for at least ten years, according to the scale fixed by the Society, an Annuity, *when they shall have attained the age of sixty years*.

Two *distinct* funds therefore have been formed to effect the above purposes,—the *benevolent* and the *annuitant*; and subscriptions to either or both will secure to the Members respective benefits, according to the laws and regulations of the Society.

The subscriber of a sum even less than fifty pounds, before he attains the age of twenty-six, as may be seen by the scale, will secure to himself, without farther expence or trouble, an *annuity* of at least that amount when he arrives at sixty years of age; whilst during the interval he may depend upon pecuniary assistance, should his health or his means fail, notwithstanding he *may not* have completed his sixtieth year; and no further arguments, therefore, it is now presumed, can be necessary, in order to recommend an Institution calculated to ensure so much of actual benefit, not only to the individual subscriber and his family, but to the Medical Profession at large.

The subscription of 26*l.* 5*s.* in addition to the admission fee of one guinea, constitutes a life member to the benevolent fund. The annual subscription to this fund 1*l.* 1*s.*

List of Officers.

Patron.—His Royal Highness the Duke of Sussex.

President.—John Latham, M. D., President of the Royal College of Physicians.

Vice-Presidents.—Henry Cline, Esq. John Hull, M. D.; Arthur Tegart, Esq.

Directors.—G. G. Currey, M. D.; Thomas Drever, M. D.;

S. Luke, M. D.; Robert Hooper, M. D.; H. Ainslie, M. D.; W. F. Chambers, M. D.; Physicians:—H. L. Thomas, Esq.; R. R. Pennington, Esq.; John Abernethy, Esq.; Edward Stanley Esq.; Robert Keate, Esq.; W. Wadd, Esq.; Surgeons:—Neville Wells, Esq.; Edward Browne, Esq.; Richard Simons, Esq.; John Hunter, Esq.; James Seaton, Esq.; Richard Walker, Esq.; Apothecaries.

Trustees.—John Latham, M. D.; Henry Cline, Esq.; Richard Radford, Esq.; John Bayford, Esq.

Treasurers.—H. Clutterbuck, M. D., New Bridge Street; Henry Field, Esq., Christ's Hospital; Richard Ogle, Esq., Great Russel Street, Bloomsbury.

Secretary.—Mr. H. C. Field, 95, Newgate Street.

Solicitor.—Charles Murray, Esq., 13, John Street.

Collector.—Mr. Thomas Upton, No. 2, Bell's Buildings, Salisbury Square. *Bankers.*—Messrs. Childs, Temple Bar.

Table shewing the Sum to be paid at one Payment, or to be paid annually, in order to secure an Annuity of 50l. to the Subscriber during the Remainder of his Life, after having attained the Age of Sixty, and after having been a Subscriber ten Years.

Age.	Single Payment.		Annual Payment.		Age.	Single Payment.		Annual Payment.	
	£	s	£	s		£	s	£	s
21	39	8	2	12	41	122	16	11	13
22	41	12	2	16	42	130	12	12	16
23	43	18	2	19	43	138	18	14	3
24	46	8	3	3	44	147	18	15	11
25	49	0	3	8	45	157	8	17	8
26	52	0	3	12	46	167	16	19	5
27	55	10	3	18	47	178	18	21	15
28	58	0	4	3	48	190	18	24	3
29	61	4	4	9	49	203	16	27	17
30	65	0	4	16	50	217	16	31	11
31	68	16	5	5	51	209	7	26	12
32	74	14	5	15	52	200	17	25	14
33	76	16	6	1	53	192	4	24	14
34	81	6	6	9	54	183	11	23	14
35	88	10	6	19	55	174	14	22	14
36	91	6	7	10	56	165	18	21	14
37	96	16	8	4	57	156	19	20	12
38	102	14	8	18	58	148	0	19	12
39	109	0	9	15	59	138	19	18	10
40	115	10	10	11	60	129	18	17	10

Jacobs' lately discovered Membrane in the Eye.

Extract from a Letter to one of the Editors; from John Edwards Holbrook, M. D., dated Dublin, July 20, 1819.

“I have taken the liberty of communicating to you, the method of dissecting and displaying a membrane lately discovered in the eye by Mr. Jacobs, demonstrator of anatomy, in the College of this place, who very kindly instructed me how to find it. The sclerotic coat of the eye is to be removed as usual, without injury to the choroides. The eye is now to be placed under water; with a forceps in each hand, gently tear off the choroid coat to a sufficient distance, commencing at the place where the optic nerve enters the eye. This will lay bare what was formerly supposed to be the retina—it is not: but a distinct membrane; for it can easily be detached from the retina, by insinuating the handle of the scalpel under it, near the entrance of the optic nerve, and gently pushing it down. When this membrane is thus removed, still the two coats of the retina will remain as described by anatomists. As it adheres more closely about those places where the retina receives blood-vessels, Mr. Jacobs is of opinion that it also derives nourishment from the same source. Now, in order to display this or any other preparation of the eye, Mr. Jacobs makes use of semi-globular glass vessels, that will magnify the object about three diameters. These are to be accurately fitted to glass plates by grinding. The vessel being filled with water, is placed over the eye on the plate. Thus you have a preparation that can be moved without fear of injury, and an excellent view of the desired object on all sides.”

The Royal Society of London.

A paper, by Sir E. Home, was read, January 14, 1819, on the Corpora Lutea. The texture of the ovarium before puberty is loose and open, and contains globular cells. After puberty, the corpora lutea are found in the substance of the ovarium. In the cow, they form a mass of convolutions, which Sir E. compared to those of the brain. The ova are formed in the corpora lutea; and, according to our author, exist previously to,

and independently of, sexual intercourse; and when the ova are formed, the corpora lutea are destroyed by absorption, whether the contained ova are impregnated or not. Sir E. thinks that impregnation is necessary to the expulsion of the ova, and that the corpus luteum is burst by extravasated blood, its cavity, after the escape of the ovum, being found distended with blood in a coagulated state. When impregnation does not take place, the ovum remains in the cavity of the corpus luteum. Hence the author thinks it probable that the ovum is impregnated in the ovarium itself.

Beautiful drawings, illustrative of these points, accompanied the paper, founded chiefly on the observations of Mr. Bauer, who assisted Sir Everard in the present inquiry.

April 22.—A paper was read, by Sir Everard Home, on the ova of the opossum tribe. After alluding to the formation of the ova of quadrupeds, as described by him on a former occasion, the author proceeded to the subject of his present paper. The ova of the opossum tribe are formed differently from the ova of quadrupeds, and constitute two distinct gradations between that class of animals and the ornithorhynchus paradoxus, which last approaches so near the bird as to complete the series between quadrupeds and birds. The formation of an ovum in the kangaroo was first described. This, when expelled from the corpus luteum, receives a yolk in the fallopian tube, and subsequently an albumen in the uterus. The fœtus, when removed from the uterus into the marsupium, attaches itself to the nipple as formerly described.* In the wombat, and the great and small opossum, instead of corpora lutea, yolk bags are imbedded in the substance of the ovarium, and there are two uteri with a fallopian tube to each, the ovum in each uterus being separately impregnated in its own cavity. The mode of formation of the ova in the ornithorhynchus paradoxus constitutes the intermediate link between the opossum and bird. In this animal, the yolk bags are imbedded in the ovaria, and instead of a regular uterus, each fallopian tube swells out into a cavity in which the ova are impregnated.

* See Phil. Trans. vol. lxxxv. and c.

INDEX.

	Page
ACETOMETER	327
Alkali, new vegetable	131
Alienation of Mind	185
American geology	241
Aneurism, supposed case of	119
Arsenic, ore, the use of	340
Artery, carotid, supposed case of aneurism of	119
Arteria Innominata, ligature of	1
Artificial pupil, operation for	333
Armstrong on the Scarlet Fever, &c.	74
Asthma relieved by galvanism	342
Aversa, Madhouse at	562
Avignon, Lunatic Asylum in	426
Angostura, an account of the Fever at	584
Ayre on Marasmus	383
 Battle on Lake Erie, Surgical account of	 28
Blackadder on phagedæna gangrænosa	199
Battley on sarsaparilla	365
Bradley on a stridulous affection of the bowels	470
Breathing, difficulty of, produced by injecting air into the veins of a dog	164
Breschet on Fistulæ	391
Bedstead, by Coates	543
Bottling of wine, season for	67
Blood, on the circulation of, through the lungs	122
transfusion of	145
 Case of a knife swallowed without injury	 41
Cancerous tumour affecting the ribs, successfully extirpated	44
Carotid artery, supposed aneurism of	119
Cadmium	133
Calcutta, Epidemic at	176
Calculi, urinary, observations on	297

	Page
Chaussier on prussiate of mercury	347
Cancer, Young on	378
Cancer, observations on, by Parkinson	433
Chenopodium Olidum	132
Child aged six months, swallowed a knife without injury	42
Circulation of the blood through the lungs	122
Climate of Nice, observations on	178
Coffin, from the opening of, sickness produced	48
Colchicum, on the use of	133
Coates's improved bedstead	543
Corpora Lutea, Home on	567
Curtis on the ear	453
Danger of dissections	47
Death from opening dead bodies	49
Deafness, use of emetics in	420
Dissections, dangers of	47
Difficult respiration induced, by injecting air into the veins of a dog	164
Diseases connected with milking, &c.	364
Discharge, puriform, from the ear	453
Dispensatory, by Thomson	467
Drugs, poisonous	561
Evans on Epidemic in Calcutta	176
Ear, puriform discharge from	453
Experiments and observations on vision	33
Experiments and observations on the circulation of the blood through the lungs	122
Experiments on the transfusion of the blood	145
Experiments with Galvanism on the body of a criminal	347
Elephantiasis in Iceland	358
Emetic Plants, observations on	446
Emetics, use of, in deafness	420
Excision of a portion of the Ribs and Pleura	44
Extirpation of the Uterus, successful case of	52
Epidemic in Jessore	174
Epidemic in Calcutta	176
Esquirol on the Saltpétriére	279
Ergot, on its use	260
Erie, lake, account of the battle on	28
Eyes, their power of distinct vision differing in the same person	33

	Page
Franck on Tetanus	277
Fracture bed	543
Fever, contagious	480
Fever, yellow, by Morgan	534
Fistula, Breschet on	391
Fœtus, blighted	531
Gas from turf	136
Gravel, Majendie on	219
Galvanism employed in the cure of Asthma	342
Gasc on the use of Arsenic	340
Galvanism, experiments with	347
Gray on Emetic plants	446
Graham on Contagious Fever	480
Geology, American	241
Griffitts on supposed aneurism of carotid artery	119
Hall's experiments and observations on vision	33
Harlan on the circulation of the blood	122
Hall on mimosa	367
Harlan on intussusception	405
Hallaran on insanity	514
Henderson on elephantiasis in Iceland	358
Hernia, Umbilical	553
Heat in Philadelphia	557
History of Materia Medica	337
Home on the colchicum	133
Hæmorrhoids, Montegre on	227
Hospital, Pennsylvania	562
Home on the corpora lutea	567
Humphreys' inhaler	259
Hutchison on urinary calculi	297
Huger on umbilical hernia	553
Hydrocele, observations on	166
Hydrophobia, use of scutellaria in	402
cases of	414
Inhaler, Humphreys'	259
Ingalls on varicose swelling of the labia pudendi	409
Insanity, causes and cure of	514
Jacobs' membrane of the retina	567
Intelligence	129, 260, 411, 555

	Page
Jessore, Epidemic in	174
Infrequency of urinary calculi in seafaring men	297
Iceland, elephantiasis in	358
Johnson on rabies contagiosa	450
Julien's topical view of the vine districts	63
Intussusception, case of, by Harlan	405
Knife, swallowed without injury, case of	41
Labia pudendi, varicose swelling of	409
Lescure on nux vomica	361
Ligature of the arteria innominata	1
London, vaccination in	558
London Medical Benevolent Society	565
Lungs, circulation of the blood through	122
Majendie on gravel	219
Maclure on American geology	241
Maunoir on artificial pupil	333
Materia Medica, progress of	337
Marasmus, Ayre on	383
M'Dowell on diseased ovaria	546
Madhouse at Aversa	562
Measles, Armstrong on	74
Mental alienation	185
Membrana pupillaris	189
Mercury, prussiate of	345
Medicine, forensic	455
Mercury, its efficacy in chronic rheumatism	528
Mease on blighted fœtus	531
Medical Statistics of Paris	563
Medical Benevolent Society of London	565
Membrane, new, of the retina	567
Mott on the ligature of the arteria innominata	1
Montegre on Hæmorrhoids	227
Morphia, observations on	423
Morgan on yellow fever	534
Newnham on inversion of the uterus	52
Nævi materni, Wardrop on	315
Nice, observations on the climate of	178
Nux vomica, some account of	345
influence of, in paralysis	361

	Page
Observations on the cure of hydrocele	166
on the climate of Nice	178
on tetanus	277
Obituary notices	296, 428, 562
Otto on rheumatism	528
Oronoco, the fever of	534
Ovaria, diseased, operation for	546
Parson's surgical account of the naval battle on lake Erie	28
Phagedæna gangrænosa	199
Parturition, use of ergot in	260
Paralysis, effects of nux vomica in	361
Parkinson on cancer	433
Plants, indigenous, emetic	446
Pharmacopœia, American	411, 555
Patients, list of, in the Pennsylvania Hospital	562
Paris, medical statistics of	563
Percy on the dangers of dissections	47
Persons dangerously affected by opening a coffin	48
Pettigrew on forensic medicine	455
Premium offered by the Medical Society	423
Perry, Oliver H., an account of his last illness	534
Pennsylvania Hospital	562
Phthisis, on its development	136
Philadelphia, comparative heat in	557
mortality in	557
report of vaccination in	558
Power of vision, unequal in the two eyes of the same person	39
Progress of Materia Medica	337
Poisonous drugs	561
Pupils contract on viewing near objects	37
Pulmonary consumption, review of, Armstrong on	74
Pupil, artificial, operation for	333
Prussiate of mercury in the cure of syphilis	345
Publications, recent, list of	143, 432
Pyramidal muscle, wounded, peritoneum uninjured, case of	31
Physicians of Philadelphia, College of, officers in	431
Rabies contagiosa	450
Review of Julien on the Vine Districts	63
Armstrong on Scarlet Fever, &c.	75
Newnham on Inversio Uteri	52

	Page
Review of Cloquet on the Membrana Pupillaris	189
Blackadder on Phagedæna Gangrænosa	199
Majendie on the Gravel	219
Observations on Hæmorrhoids	227
American Geology	241
Hall on Mimosa	367
Young on Cancer	378
Ayre on Marasmus	383
Breschet on Fistulæ	391
Thomson's London Dispensatory	467
Bradley on a stridulous affection of the Bowels	470
Graham on Contagious Fever	480
Hallaran on Insanity	514
Rheumatism, chronic, cured by mercury	528
Retina, new membrane of	567
Richerand on the excision of a portion of ribs and pleura	44
Scarlet Fever, review of Armstrong on	74
Sarsaparilla, preparations of	365
Season for bottling wine	67
Seafaring men, infrequency of calculi in	297
Sickness produced from the opening of a coffin	48
Stridulous affection of the bowels	470
Society of Naturalists in Moscow	137
American Philosophical	142
Vaccine, in Philadelphia	140
Medical, in Philadelphia	428
Geological, in Connecticut	422
Medical Benevolent, of London	565
Scutellaria lateriflora in hydrophobia	402
Transfusion of the blood	145
Taylor on the acetometer	396
Tetanus, observations on	277
Topical view of the vine districts	63
Thomson on varioloid disease	263
Toddalia, some account of	346
Thomson's London Dispensatory	467
Tumour, cancerous, of the ribs and pleura successfully removed	44
Turf, gas from	136
Tunica vaginalis testis, hydrocele of	166
Tytler on epidemic in Jessore	174

	Page
Uterus, cases of inversion of - - - -	52
successfully extirpated - - - -	52
Urinary calculi - - - -	297
Ure's experiments on the body of a criminal - -	347
University of Pennsylvania, graduates in - -	281
lectures in - - - -	561
Vaccination in India - - - -	129
Varioloid disease - - - -	263
Vancleve on scutellaria lateriflora - - - -	403
Varicose swelling of the labia pudendi - - -	409
Vaccination in Philadelphia - - - -	558
in London - - - -	558
Vegetable alkali, new - - - -	131
Vision, experiments on by M. Hall - - - -	33
Vine countries, topical view of - - - -	63
Wardrop on nævi materni - - - -	314
Wine, season for bottling of - - - -	67
Wood on the cure of hydrocele - - - -	166
Young on cancer - - - -	378



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CONTENTS.

Selected Papers.

- Reflections on Securing in a Ligature the Arteria Innominata. By Valentine Mott, M. D. - 1
- Surgical Account of the Naval Battle on Lake Erie. By Usher Parsons, M. D. - 28
- Experiments and Observations relative to Vision. By Marshall Hall, M. D. - 33
- Case of a Child aged six months, who swallowed a double-bladed Knife without Injury. - 41
- History of the Excision of a Portion of the Ribs and Pleura. By M. Richerand. - 44
- On the Dangers of Dissection. By M. Percy. - 47

Selected Reviews.

- An Essay on the Symptoms, Causes, and Treatment, of Inversio Uteri; with a History of the Successful

- Extirpation of that Organ. By Newnham, Esq. -
- A Topographical View of all the Known Vine-districts, &c. &c. By A. Jullien. - 63
- Practical Illustrations of the Fever, Measles, Pulmonary Consumption, and Chronic Diseases; with Remarks on Sulphureous Waters, &c. By John Armstrong, M. D. - 74

Original Paper

- Case of supposed Anæmia of the Right Carotid Artery. By Samuel Powell Griffiths, M. D. - 119
- Two Experiments performed on Living Animals, to prove that the Circulation of the Blood, through the Lungs, is immediately and entirely suppressed during Expiration. By Richard Darlan, M. D. - 122
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CONTENTS.

Selected Papers.

- Experiments on the Transfusion of Blood by the Syringe. By James Blundell, M. D. - - - 145
- Some Observations on the cure of Hydrocele of the Tunica Vaginalis Testis, without producing an Obliteration of the Sac. By Kinder Wood, Esq., - - - 166
- Observations on the Sickness which prevailed at Jessore, (Bengal), in the months of August and September, 1817. By Robert Tytler, M. D. - - - 174
- Some Remarks on the Climate and Situation of Nice, with observations on the Temperature and weather, taken in the Winter of 1816 and Spring of 1817, - - - 178
- On Mental Alienation, - - - 185

Selected Reviews.

- Memoir on the Membrana pupillaris, and on the Formation of the Arterial Circle of the Iris. Translated for the Eclectic Repertory, - 189
- Observations on Phagedæna Gangrænosa. By H. Home Blackadder, Surgeon, - - - 199
- Physiological and Medical Researches on the Causes, Symptoms and Treatment of Gravel. By F. Ma-

- jendie, M. D., - - - 219
- Pathological and Therapeutical Observations on Hæmorrhoids. From the French of Montegre, - - 227
- Observations on the Geology of the United States of America. By William Maclure, and
- An Elementary Treatise on Mineralogy and Geology. By Parker Cleaveland, - - - 241

Original Paper.

- Description of an Improved Inhaler. By Joshua Humphreys, - - 259

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- On the first use of Ergot to promote Parturition, - - - 260
- Some Observations on the Varioloid Disease, which has lately prevailed at Edinburgh, and on the identity of Chicken pox and modified Small pox. By John Thomson, M. D., - - - 263
- Observations on Tetanus. By Dr. Franck, - - - 277
- M. Esquirol's Observations at the Salpêtrière, - - - 279
- Graduates in Medicine, at the University of Pennsylvania, - - 281
- Bills of Mortality, - - - 284—296

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CONTENTS.

Selected Papers.

- On the comparative infrequency of Urinary Calculi among Seafaring people. By A. Copeland Hutchison, Esq., - - - 297
Observations on one species of *Nævus Maternus*. By James Wardrop, Esq., - - - 314
On the Acetometer. By J. and P. Taylor, - - - 326
Further Account of the results of an Operation for forming an artificial Pupil. By J. P. Maunoir, - 333
An Account of the progress of Knowledge respecting *Materia Medica*, - - - 337
An Account of some Experiments made on the body of a Criminal immediately after execution. By Andrew Ure, M. D., - - - 347
Account of the Elephantiasis in Iceland. By Ebenezer Henderson, 358
Cases illustrative of the beneficial influence of *Nux Vomica* in Paralysis, - - - 361
Diseases contracted by milking Cattle and Sheep, - - - 364
On Sarsaparilla. By R. Battley, 365

Selected Reviews.

- On the Mimoses; or, a descriptive, diagnostic, and practical Essay on the Affections usually denominated Dyspeptic, Hypochondriac, Bilious, Nervous, Chlorotic, Hysterical, Spasmodic, &c. By Marshall Hall, M. D., - - - 367
Minutes of Cases of Cancer, Part II. By Samuel Young, - - - 378
Practical Observations on the Nature and Treatment of Marasmus. By Joseph Ayre, M. D. - - - 383
General Reflections on *Fistulæ*. By M. Breschet, - - - 391

Original Papers.

- Observations on Scull-cap, as a preventive in Hydrophobia. By John Vancleve, M. D., - - - 402
Case of Intussusception. By Richard Harlan, M. D., - - - 405
Case of Varicose Swelling of the Labia Pudendi. By William Ingalls, M. D., - - - 409

Medical and Philosophical Intelligence, - - - 411—430

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CONTENTS.

Selected Papers.

- Observations on Cancer. By T. Par-
kinson, M. D. - - - 433
Enumeration of those Indigenous
Plants which have an Emetic Ef-
fect. By Mr. Gray, - - - 446
Observations on Rabies Contagiosa.
By Daniel Johnson, Esq. - - 450
On the Treatment of Puriform dis-
charge from the Ear. By J. H. Cur-
tis, Esq. - - - 453
Abstract of the Anniversary Oration
delivered before the Medical So-
ciety of London, on the 8th of
March last. By T. J. Pettigrew,
Surgeon, - - - 455

Selected Reviews.

- The London Dispensatory. By An-
thony Todd Thomson, F. L. S. 467
Observations on a Stridulous Affec-
tion of the Bowels; and on some
Varieties of Spinal Disease: with
an Appendix of Cases. By J. Brad-
ley, M. D. - - - 470
Tracts relative to the Causes, Cure,
and Prevention of Contagious
Fever, - - - 482
Practical Observations on the Causes

and Cure of Insanity. By William
Saunders Hallaran, M. D. 514

Original Papers.

- On the Cure of Chronic Rheumatism.
By John C. Otto, M. D. - 528
Cases of Blighted Fetuses discharg-
ed from the Uterus at various ages,
living children still remaining to
the full period of Utero-Gestation.
By James Mease, M. D. - 531
Account of the Inflammatory Bilious
or Yellow Fever at Angostura, and
in the river Orinoco; with the par-
ticulars of the illness and death of
Commodore Oliver H. Perry. By
Mordecai Morgan, M. D. - 534
Description of a new Machine-Bed,
for the sick and persons with frac-
tures of the lower extremities. By
Benjamin H. Coates, M. D. 543
Observations on Diseased Ovaria. By
Ephraim M'Dowell, M. D. 546
Case of Umbilical Hernia, with the
appearances on dissection. By Ben-
jamin Huger, M. D. - - 553

*Medical and Philosophical Intelli-
gence, - - - 555—568*

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